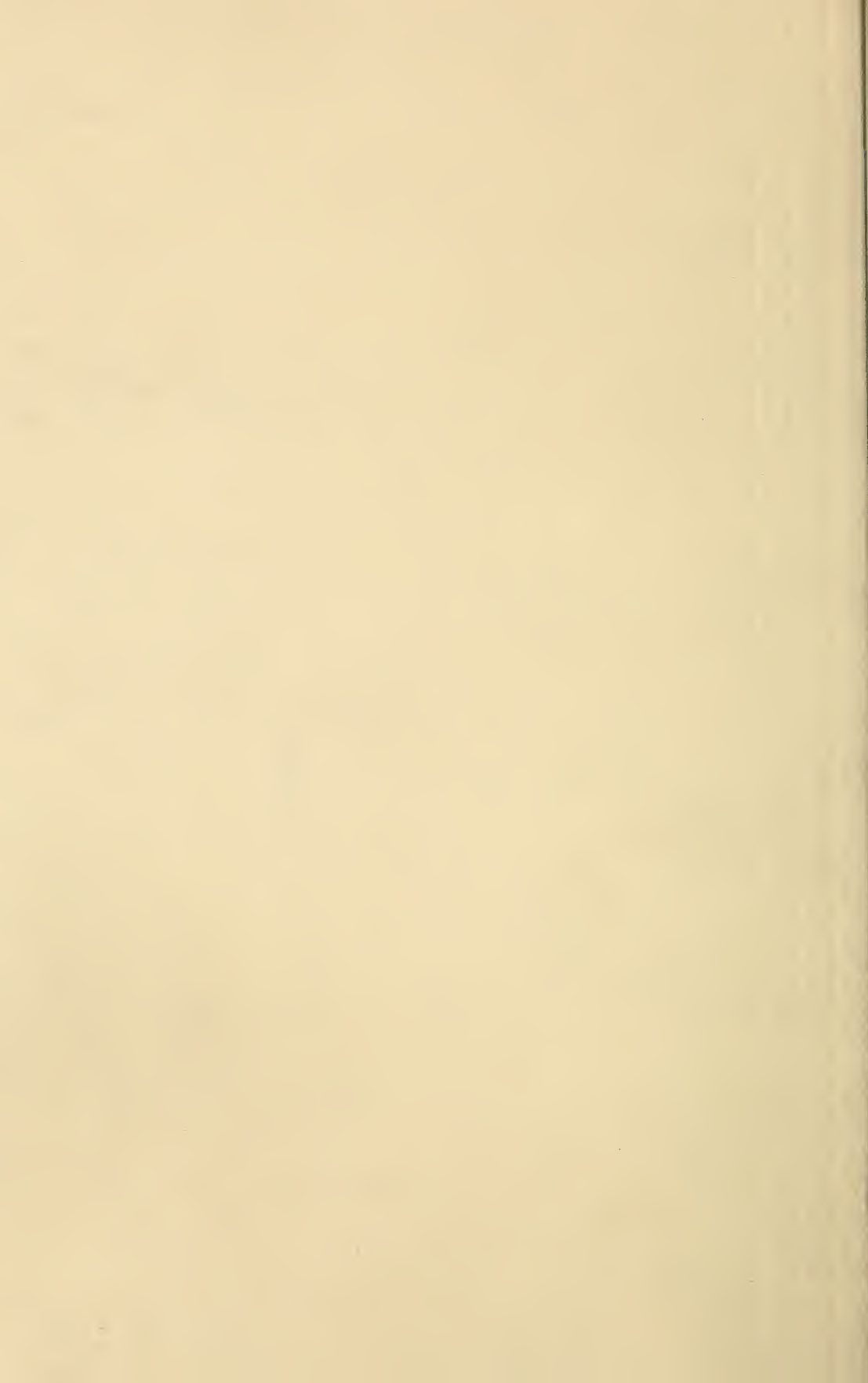


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GLEANNINGS

A JOURNAL DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS.

BEE CULTURE

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No. 3.

STRAY STRAWS

FROM DR. C. C. MILLER.

SYMPOSIUMS are to come this year, eh? Good!

CARBOLIC ACID is recommended as a remedy for burns in *The Prescription*.

MANY BEES give much honey, and much honey gives many bees.—*Abbe Collin*. [Very true.—Ed.]

THAT REVERSIBLE bottom-board, p. 65, is a good thing, only the deep side should be an inch deeper.

POLLEN, says Prof. Brabant, in *Progres Apicole*, is not good for bees in winter, but getting rid of it is as troublesome as leaving it.

THE LATEST CURE for bee-stings I find in *Bulletin de la Somme*. Cut the head of a white poppy and drop the milky juice on the wound.

A RECORD BOOK has this advantage, that it can be referred to at any time, and is often useful in furnishing testimony as to events that transpired years ago.

THAT DISCOVERY given on page 50 is a good thing; but if Mr. Sallemant had read GLEANINGS I think he would have found that way of getting out bees years ago. It's been in use here may be ten years.

THE NEW PORTER ESCAPE, p. 64, will be fine to clear bees out of a pile of supers off the hive. Isn't it just possible it may work better than the old kind when on the hive? [Perhaps. Tests this summer will determine.—Ed.]

FOUNDATION with cells an eighth larger than worker-cells, for the sake of raising larger workers, is one of the things meditated in France, according to *Le Progres Apicole*. Been tried in this country, hasn't it, A. I.? [Yes; but it didn't make larger bees.—Ed.]

NUMBERING HIVES is favored by about three out of four of those who reply in *A. B. J.*, and about the same proportion think the numbers should be detachable. Say, you Medinamiters,

are you going to have any tags ready for us by spring? [Yes, they are ready now—tag-board manilla, 50 cts. per 100.—Ed.]

THOSE WHO SAY fires are bad in bee-cells have been in the habit of quoting Doolittle's experience; but you see on p. 61 he says it was the "poisonous vapor" of an oil-stove that did the mischief. If I'd let the smoke of my stove empty into the cellar the fire would be a bad thing for my bees too.

A WRITER in *B. B. J.* gives a case to prove that a colony made queenless starts a queen from a larva and not from an egg. I didn't suppose there was any question about that nowadays. [Given eggs and larvæ they will invariably start the cells from the latter, if queenless—at least, that is our experience.—Ed.]

I'VE LEARNED two things from last GLEANINGS among others—that live steam will burn wax, and that the presence of wax will spoil honey at 150°. [Mr. Taylor ought to try his honey-heating experiment over again; because as it is, nothing is proven except perhaps what we already knew, that wax, when heated with honey, darkens the honey.—Ed.]

M. BERTRAND, editor of the *Revue*, accepted with favor the theory that bees inherit character from the nurses. He introduced a Caucasian queen of great gentleness into a very vicious colony, and the progeny of the new queen showed no trace of viciousness. He is now very doubtful as to the correctness of the theory.

A DELIGHTFUL VISIT I had from the editor of GLEANINGS; but his coming made a sensible diminution in the amount of beef on the market. His appearance certainly speaks well for the benefits of a beef diet. [Yes, I weigh the most I ever did in my life. Early in the summer my weight was 117 lbs.; now it is 145, and is still on the increase.—Ed.]

THE REPORT of the U. S. Secretary of Agriculture quotes the English honey market as giving "Thurber-Whyland's white-sage, strained, 1-pound jars" at only 1c a pound more than

"Californian in original cans." One can not help pitying that poor cent in having so much to do in covering the expense of jars and putting up. The report innocently remarks, "It would be ruinous to send adulterated honey to England."

REPLYING TO THAT FOOTNOTE on page 48, I think it's a fine thing to have *occasional* spells of warming up a cellar if it's too cold; but it's a much finer thing to keep it even all the time at that point that keeps bees most quiet. If I could hold my cellar at that point every minute of the time, and have the air always sweet, I'd risk the bees. That's what enrages me so at Doolittle and his cave. I can't keep my cellar so even.

I PROTEST, I earnestly protest, against that sort of tyranny that says I must use spacers. I don't like them at all for comb honey, just because they don't suit extractors. Next thing you'll be making me produce comb honey in brood-frames just because extracted - honey men have no use for sections. [If you don't like "that sort of tyranny"—why, just revolt. Perhaps you and I together can *force* the extracted-honey men into producing extracted honey from sections. If you won't go to the mountain, *perhaps* the mountain will come to you.—Ed.]

LAZY BEES have often been talked about, and a difference as to the industry of different colonies has been generally admitted; but it strikes one as revolutionary to hear Wm. S. Barclay suggest, in *A. B. J.*, that there may be such a thing as old bees playing in front of the hive when bees generally are at work in the field. Do old bees play? [I have seen bees "play" many times, but I never saw old shiny backs engaged in such frivolous pastime. In all cases under my observation, the bees that play are the bright fuzzy ones—the younger ones.—Ed.]

MR. EDITOR, you say the Standard Dictionary uses "apiary" as an adjective, page 48. Nouns are constantly used as adjectives, just as you make the nouns "clover" and "chunk" do duty as adjectives on the same page. But that doesn't warrant you in using an adjective as a noun. Drinking-water might be used for dish-water, but hardly dish-water for drinking-water. [Correct; we did not mean to say the Standard was right to call Dr. Miller the definer of "apiary terms." The book itself does not use apiary as an adjective in defining that term.—Ed.]

COMMENTING on figures given by Baldensperger (see p. 951) who counts the life of a worker from 35 to 40 days, and whose colonies reach only 35,000 to 40,000 in number, the editor of French *Revue* thinks it must be that bees do not live so long in Palestine as elsewhere. M. Bertrand reports an experimental swarm hived

June 24 without a queen, and yet Nov. 22 it had at least 8000 bees living. [Isn't it true that bees are shorter lived in hot than colder or temperate climates? In the first mentioned they can fly every day of their lives, and hence wear out sooner.—Ed.]

THAT LITTLE FICTION, that paper is necessary between the sheets of foundation, lives on year after year, in spite of the trouble it makes to get the paper out of the way. I have piles of foundation 18 inches deep without paper, that have stood three years in a window with only a thin board to keep off the direct rays of the sun, and I can separate the sheets easier than if papered. [I saw those piles of foundation unpapered, and I can vouch for the doctor's statements. We papered because we thought it necessary. We shall be very glad to believe it is not. How is it, readers?—Ed.]



THAT WINTERING SYMPOSIUM; MAMMOTH SOLAR WAX-EXTRACTORS IN OLDEN TIMES:

THE KITCHEN STOVE.



You need not fear, Mr. Editor, that the wild and frantic admiration, and the storms of applause with which these Skylark papers have been received, will either abate or be disappointed. It is true, I have not been able (in my own small plant) to manufacture a sufficient supply of undeveloped intellect for my own use. Besides, my baler is broken and there is no mechanic in this country place who understands how to repair it. But I have made a contract with the best and strongest company in the United States for a full supply—a carload a week—pending the erection of a large factory which I have designed. These papers shall always be the *ne plus ultra* and *sine qua non* of *mulum in parvo*. If any man can beat that, I should like to see him hitch up his team and drive out. Don't be afraid, Mr. Editor. I am equal to the occasion.

I have read in GLEANINGS the whole eight articles for wintering bees. From all I can gather from the eight writers, and their descriptions of their methods, I can't see that they differ very widely from one I built for my bees in the East, twenty years ago. Putting all their plans together, and making one building out of them, would be a downright and palpable infringement on my patent. But as that ran out about three years ago, I suppose I have no recourse.

The author of "Canadian Beedom," in the *American Bee Journal*, p. 793, gets mad because North America is not in Canada, according to the new constitution of the North American Bee-keepers' Union. Listen to him:

But what most concerns Canadian beedom is the entire absence of all recognition of Canada, except so far as it is part of North America. In this respect it is only on a parallel with Mexico. The constitution of the old association distinctly said: "This organization shall be known as 'The North American Bee-keepers' Association,' and shall include in its territory all of the United States and Canada." All this has been struck out. There were three Canadians on the committee who do not appear to have objected to their country being dropped in silence. They will have a chance to explain and defend themselves at the annual meeting of the Ontario Bee-keepers' Association, in January.

No: he kicks because Canada is not in North America. Just listen to—

ARTICLE I.—NAME.

This organization shall be known as the "North American Bee-keepers' Union," and shall hold meetings annually at such time and place as may be designated by the Board of Directors, due notice being mailed to all members at least 60 days previously, and published in the bee-periodicals of the United States and Canada.

And I kick because the United States is not in North America, and because of the entire absence of all recognition of the United States, only so far as it is a part of North America. We both kick, on the same ground, individually, collectively, and all together. We stand erect on our hind feet, with our bristles up, and demand justice.

I am glad that the three members of that committee will have to answer for their crime to the Ontario convention. But the four American members will have a tough time answering to me for permitting "their country to be dropped in silence." Friend Beedom, both the United States and Canada are treated *exactly* alike.

I see that Prof. Wiley has given to the world another "scientific pleasantry." He was the author of what the *American Bee Journal*, in the days of Thos. G. Newman, stigmatized, very justly, as the "Wiley lie." After letting it run for years through the papers of Europe and America he explained it by saying it was a "scientific pleasantry." Now he says that "honey is cheap because much of it that is sold is nothing but molasses." "Great men are not always wise." Is comb honey nothing but molasses? It is also as low, in proportion, as extracted.

Dr. G. P. Hachenberg, in the *American Bee Journal*, after having covered his kitchen floor with a carpet of boiling wax, and nearly burned down his house, was driven out by the women, and compelled to resort to invention. Served him right. Any person who resorts to a kitchen stove to render wax deserves all he gets. Three rocks and a kettle, off a distance from the house, is the place to render out wax in that way. He says, "I tried fire, hot air, steam, and the sun process, but with little satisfaction. The extracting was either too slow and waste-

ful, or proved damaging to the wax." Does he mean by the "sun process" that he tried the solar extractor? No. He must mean some other sun process; for further on he says:

Some philanthropic bee-man may suggest to me to use the wax-extractor. I know nothing about that machine, but I know enough about the adhesiveness and gummification of beeswax, on a philosophic theory, to believe that it can not be thoroughly and economically rendered by machinery. If it had the nature of pure oil or water, I should not have these pessimistic views about it.

It will be clearly seen that he is unacquainted with the solar extractor, and yet he knows enough on "philosophic theory" to know that it won't work, and that "the wax can not be rendered out thoroughly and economically." He doesn't believe in it, because he evidently never saw one, and because it is a "machine."

If he had seen some of the great solar extractors that were here 15 or 20 years ago—20 to 25 feet long and 6 to 8 feet wide—he would have opened his eyes. They were built principally for extracting honey—wax was a secondary consideration. This was before the revolving extractor made its way to this coast. They were generally built so the pipe would run into the honey-house. The most popular shape was a half-octagon. A strong rack was fitted in—about a third of the way from the top—that rested on the sides of the extractor. Then this rack was covered with clean sacking, and the honey piled in, frames and all, just as they came from the hive. Of course, the whole inside of the extractor was bright tin, and it was covered with glass. They would extract from 1000 to 1500 pounds of honey per day. But when old comb was to be rendered out they put water in the extractor so as to keep the wax above the faucet, or gate, and greased the sides of the extractor, above the water, as high up as they thought the wax would come. In this way there was no "stickiness," "adhesiveness," nor "gummification."

Now, after the doctor stopped running he resorted to invention. He invented a can in a pot of water. He also "invented" a piece of wire cloth to go down on top of the combs which are in the can, or ought to be there. Also he "did invent" two iron rods attached to the wire screen, coming high up above the can, and joined at top to hang a flatiron on for a weight. The doctor is opposed to machinery, and that is the reason he has kept so closely to the old plan of a big kettle, a sack of combs, and three rocks to hold it down, for his machine is absolutely that and nothing more. But after all his tribulation, his conflagration, and his foot-race to get away from the women, he advises his readers to break the wax out in chunks and run it into cakes on the kitchen stove! No, no, doctor, not while we can see in imagination the pots, pans, skillets, and broomsticks flying around your head as you fled down the garden path.



EUROPEAN AND OTHER MATTERS.

DRIVING BEES OUT OF HOLLOW TREES.

By Charles Norman.

Quite a novel way—novel to me at any rate—of driving bees out of a hollow tree has been given by a French priest, father Métails (*Revue*). He writes: "Visiting a village of my parish one day I met a man who was going to take out of the hole of a tree a swarm which had entered there the previous day. He begged me to do the work for him, for he was badly equipped and feared a little the stings of the bees. I accepted with the same zeal that I always feel for any thing connected with bees. Having provided myself with a mirror I let the man fetch me a lot of large ants with their eggs, and threw two handfuls of them into the hole of the tree upon the bees. Almost at once the poor insects, forced by the ants, rose in confusion and flew off. I ran before them with my mirror, and in consequence of this they settled on the branch of a tree near by. Not having a smoker I placed the hive above the swarm and set to tapping the branch on which the bees were suspended. They were not slow in ascending, and had, after a few minutes, entered the hive." For the information of some of your readers I remark that in Europe, to make a swarm cluster, instead of using the fountain-pump, the rays of the sun are directed on the bees by means of a mirror.

A German bee-keeper uses another method of getting the bees out. He reports to the *Bienen-vater*: "A swarm had settled in a hollow tree. The hole extended both upward and downward from the entrance. The bees were in the upper part of the hollow. I took a swarm-hiving box and put in it an empty comb on which I had placed a queen-cage with a reserve-queen. The box I fastened above the opening of the hollow tree. Then I poured a little carbolic acid in. I was astonished at the effect. After a few moments the bees came out like a natural swarm. After about ten minutes all were out, marched into the box, and half an hour later they were already gathering nectar."

CARBOLIC ACID FOR STOPPING ROBBING.

Concerning carbolic acid, Mr. A. Lenk reports to the *Leipziger Bienenzeitung* how he stopped robbing. He leaned a little piece of board over the entrance of the hive, and poured a few drops of carbolic acid on it. All robbing was over at once. To be sure, though, he wet another small piece of board with carbolic acid, and then laid it on the entrance-board. He says he always succeeded with the remedy,

yet the board must not be planed, as a planed one does not take the acid readily.

THOSE FOOTNOTES, AND HOW THEY ARE REGARDED BY EUROPEAN WRITERS.

A month or two ago I again noticed that, referring to GLEANINGS, somebody pointed at "that everlasting footnote, as some have called it." Now, is it really worth while to find fault with such a trivial thing? Mr. Hutchinson, for instance, in his splendid monthly, the *Review*, says whatever he has to say in his Editorial Department while you speak out editorially in footnotes. But either of you—as well as other editors—*speak out!* Well, then, is not the whole difference merely an external one? In my opinion, the question is not *where* the speaking is done, but whether it is done *right*. If what you say is wrong, then let them go for you—sharp, if needs be—but if it is right, then they must let you alone. Perhaps it is a little satisfaction to you to understand that Mr. Baldensperger (I need not introduce him to the readers of GLEANINGS), in the *Revue*, after saying that your footnotes give a "veritable valeur" (genuine value) to your journal, continues: "These remarks below the articles have 'une note gaie' (a lively tone), and the writer knows what to 'hold to,' as we say in French, but, to speak in more colloquial English, he knows how to maintain his position, and to rectify possible errors in the writings of others. I state with pleasure that you (Mr. Bertrand) also give your approbation, and this is indispensable, it seems to me." Mr. Bertrand, in a footnote, says: "I imitate Bro. Root because I have been requested to do so." When a writer of Mr. Bertrand's good taste (those Frenchmen, you know) follows your precedence you can not be much out of the way, Mr. Editor.

HOT WATER—WILL IT NOT PRODUCE WEAKNESS?

□ Still another remark. You always speak of hot water. Now, I dare not pretend that the same is not useful in certain instances; it stimulates, no doubt, and may do some good when taken once or, perhaps, even now and then. But to think that a person, day after day, pours down into his or her stomach a pint of hot water four times a day—is this not atrocious? Must it not finally produce a weakening, debilitating effect, like some medicine that seemingly cures, but leads to diseases which show later on? Therefore I ask, would not, as a rule, warm water be very much more preferable? In fact, are you sure that Dr. Salisbury *himself* recommends hot-water in the way you are using it? On page 787 he says in regard to the hot water, "Take water at a temperature most comfortable to the individual, *but not cold*."

This does not sound very hot; it just sounds warm, not more nor less than warm! As you have brought the subject before your readers, and, I trust, do not want to injure or kill them

(your subscribers), you should certainly explain, or, rather, let Dr. Salisbury himself explain.

St. Petersburg, Fla.

[I do not have very much faith in looking-glasses in diverting or controlling swarms while in the air; but I am very certain from experience that sprays of water thrown up among the flying bees do have a most decided effect in driving them like sheep, and of causing them to alight when they would not otherwise do so. I have seen a looking-glass used occasionally, but could never discover that it had any influence.

A good many times we have been asked if there is a way to get bees out of hollow trees without cutting the trees—the owners of the trees in question objecting to having them cut down. The plan proposed by the German bee-keeper, as reported in the *Bienenwater*, I think would work. Bees have a great dislike for carbolic acid. If they were once driven out of the tree they very likely would cluster with a queen caged on the limb.

I have tried carbolic acid in the manner spoken of in the *Leipziger Bienenzeitung*, for allaying robbing. Sometimes I have thought it proved to be of assistance, and at others I have thought it only disconcerted the inmates of the hive and made matters worse.

I am very glad to see the expressions of opinion in regard to the footnotes from eminent bee-keepers across the ocean. Whenever we have asked for an opinion from our own readers their invariable request has been to have them kept going by all means.

In regard to hot water, perhaps a little explanation should be given. I take water just about as hot as the average person takes coffee or tea. Sometimes it is as hot as I can drink it, but more often it is only a little hotter than lukewarm. But hot or cold it will never produce any weakening or debilitating effect. I know of a good many who have used it, and always with beneficial results. The copious drinking of hot water four times a day, an hour and a half before dinner and supper, an hour before breakfast, and before going to bed, will very often effect a cure, even when the person continues on his ordinary rations. Warm water—well, perhaps some can drink it; but the language of the Scripture hits the matter about right where it says, "Because thou art neither hot nor cold, I will spew thee out of my mouth."

—ED.

TAYLOR'S FOUNDATION TABLE FROM ANOTHER STANDPOINT.

THE FIGURES REVIEWED

By C. P. Dadant.

Friend Ernest:—At your request I will consider and criticise friend Taylor's experiment as given in November *Review*.

To my notion, the only thing which that experiment clearly shows is what we all knew as soon as we had ever tried foundation, that, in a general way, the heavier the foundation is, the more readily the bees will work upon it, and the thicker the combs will be that are made upon it. From the tone of Mr. Taylor's writings it is evident that he is, or has been, trying his best to show his pet hobby, Given foundation, as superior to other makes; but the

unevenness of his results on those experiments show rather its inferiority.

There are many ways of turning this table, and this matter is very much like the reports of the life-insurance companies, which, though always truthfully given, can always be made to show the one company making the report ahead of all others in half a dozen points. This is a thing that has many times puzzled me. I once had an interview with an agent of the Order of United Workmen, and he soon convinced me that his company, or association, was the best, so I took a policy in this. A few years later an agent of the Mutual Life showed me that their company was ahead of any thing else in the world, and I took an insurance in that. But a little later an agent of the Northwestern showed me, in black and white, that his company was outdoing the Mutual Life in almost every direction, and I had to insure in that too. Well, was that all? No. The Banker's Life, of Des Moines, came forward with a still better statement; but I gave it up. I could not stand it, and had to draw the line somewhere. Now, these companies all publish annual reports, and, to my great wonder, they all show the best results. The fact is, so many points have to be considered that one is sure to excel in one or more of them. Let me see if I can't turn that Taylor experiment to suit my company:

Name.	Wt. of honey in 12 sections (% case).	No. sheets of fdn. in 1 lb.	No. lbs. honey harvested on each lb. f.d.a.
Dadant.	11 lbs. 11 oz.	128	124.65
Given.	12 " 8 "	108	112.48
Root.	11 " 9 "	112	107.91
Given.	10 " 11 "	112	99.74
Root-Given.	12 " 6 "	96	98.99
Given.	11 " 15 "	104	103.44
Hunt.	10 " 8 "	120	105.00
Given.	9 " 2 "	112	85.16
Old Given.	12 " "	100	100.00
Given.	9 " 12 "	95	78.00

There! isn't my crow the whitest? and did you not suspect it all along? Mind, these are Mr. Taylor's figures.

Friend Taylor speaks of the quality of the wax. Yes, that has something to do with the success, and I will suggest to him that bees are very much like human beings. A man delights in his own productions. So do the bees. Give them beeswax that smells of the hive, and they will delight in working it over. They will dig into it with pleasure, and work it earnestly and thoroughly; but the less the beeswax smells like beeswax, the less they will like it, and the slower they will be in working upon it. That is why wax that has been exposed to the air a long time is so little liked by them. will venture the assertion, however, that wax, apparently of different texture, if made on the same machine at the same date, and of the same weight, will be worked alike; and if there is a difference it will be in favor only of that which was melted the freshest from the combs. For

this reason I prefer sun-extracted beeswax to all other kinds.

Hamilton, Ill., Jan. 3.

[Yes, I did ask C. P. to review the figures from his standpoint, because, with no disrespect to Mr. Taylor, such an array of figures should be looked at from several different sides to get all the lessons to be learned.

It is said that figures will not lie if you place them right; and I believe it is equally true that a skillful arranging of figures can often be made to prove almost any thing, and yet that arrangement not give an untruthful statement. I had a similar experience with life-insurance. The first policy that I took out was in the Equitable; and the agent made so much of the point of its having the largest *surplus* that I verily believed it had the largest of every thing. Later I took a policy in the New York Mutual Life; and the special point of emphasis made by their agent was that they were the biggest company because they had the largest *assets*. Later on I was solicited to take out a policy in the Northwestern; and I was informed that an elephant was not nearly as effective as a horse in the ordinary occupations of life; that a smaller company could give a better showing than a large one; that the Northwestern could and did show the largest *earning capacity* for their policy-holders, of any of the big four. The statements made by the three agents were literally true; but by laying special emphasis upon some one feature, each agent would convey the impression that his company outranked and outrivaled the others in every thing.

You have made a good showing for your "company;" but when we come to simmer it right down, it really proves that, the thinner and lighter the foundation, the more pounds of honey can be stored upon it for a given amount of wax. This truth is almost self-evident; but it is strikingly illustrated as you have arranged the table.—ED.]

DRAWN COMBS IN SECTIONS.

THEIR ADVANTAGES; THE TAYLOR COMB-LEVELER, AND HOW TO USE IT; HOW TO CONVERT UNFINISHED SECTIONS INTO GOOD MONEY.

By B. Taylor.

Dr. A. T. Peete, of Branchville, S. C., in a private letter, says:

There is one point I wish you would explain for me, either personally or in the journals. I see the advantage of sections already drawn out, especially in poor seasons. We can easily get such here in our long summers, the main honey-flow being over by June 10. But your sections go on the hive twice or three times; are extracted once, cleaned by the bees once, and then have the combs partly melted in the leveler. *What can the wood of the section look like, after all that?* Have you no propolis, or do you have wide frames which keep every thing clean? or have you a way of cleaning the sections? I am afraid mine would look as clean as very old nest-eggs. Some light on this subject would greatly oblige me.

The doctor's way of asking questions makes it look as if the drawn combs involved a formidable amount of work. In this he is mistaken; for the sections are not returned to the

hive "three or four times," as he seems to suppose. I will try to make the matter plain by again stating just how I work to get the main part of these drawn (or partly drawn) combs.

Before we began the use of drawn combs we were compelled to restrict the room in the surplus-apartment of strong colonies, so there would not be a large lot of unfinished sections at the end of the surplus-honey season, for we then regarded unfinished sections (as they truly were) as a great misfortune to the comb-honey producer. Curtailing the section room near the end of the basswood season often resulted in renewed swarming, which is at that time a great loss; but if we continued to give unrestricted room at that time there were sure to be thousands of partly filled sections of white honey. I tried many ways to utilize such sections the next season, but without profitable results. With all our care, the honey in the uncapped cells would be more or less candied, and, when returned and finished the next season, never would be in even second-class condition, and were prone to sour and become damp and dauby.

In our locality there was nearly always a good fall flow of dark honey; and if the partly filled sections of white honey would be completed from fall flowers, in my market they would be rated below well-finished sections of entirely dark honey. These difficulties led to the experiments that perfected the "Handy" comb-leveler, which with us turned misfortune into fortune.

Basswood is here the last of the white honey for each season, as a rule. Now, we pile on unlimited supers of sections until the end of the basswood flow, and not one colony in fifty has the swarming passion renewed, but they go on storing surplus to the end. At the end of basswood the colonies thus supplied with room will have far more honey in the supers than they would if they had been *restricted* for room; and there will be more *finished* honey than in colonies with limited surplus-room; and the large quantity of unfinished sections is, if rightly used, the best capital ever owned by a comb-honey producer, for I can extract the unfinished sections, and sell the honey to my customers for 12½ cents per pound more easily than I can sell gilt-edged combs for 15 cents; and I can use the empty combs to *double* my crop of *white* honey next season. Mr. Van Deusen tried to convince me that bees would finish foundation in less time than finished combs; but after four years of practical results I know he is incorrect; for in supers with one half finished combs, and these in the outside of the supers, and the center filled with sections in which full sheets of Van Deusen and other makes of first-class foundation were used every season, the *drawn combs* were all *filled and sealed*, while the foundation in the center

(where the bees usually finish first) was left *untouched*.

Now I will try to answer pointedly Mr. Peete's questions. You see, doctor, the sections which I use for extracting and using again were got from the supers I must necessarily use in saving the honey crop, and not only without extra work or loss, but with an actual saving in both, for we avoided the swarming trouble, and did not curtail, but *increased*, the general surplus crop, and even the crop of *finished comb honey*, so there was no waste of work here. After the honey is extracted from the sections they are returned to the T supers, and on a warm afternoon are all set out at once in the open air; and by dark every section will be cleaned of every particle of honey by the bees, ready for the comb-leveler. Two hours' work will accomplish all the work of having thousands of combs cleaned; but the leveler must be used on every comb. Surely that will be a big task. No: it is but little more work than to *properly* fill sections with full sheets of foundation, especially where two pieces of foundation are used in each section; and the comb-honey producer who does not use two pieces has not yet learned his trade; so there is but little if any extra work or loss in leveling or using the drawn combs again.

But "what does the wood in the sections look like after all this?" When we first began using the drawn combs we scraped them before returning them to the super; but now we never scrape such sections until they are filled with honey again, and are ready to go into shipping-cases. We scrape the top and bottoms of all our finished supers of comb honey. Before the sections are removed therefrom they are all wedged up tight in the supers; and, the work being *accurately* done, the tops and bottoms are nearly as smooth and level as a board. We set them on end on a table; sit down in front of them, and with a scraper made of a piece of old saw cut to a proper shape, and sharpened so it will cut like a smoothing-plane, we quickly make the sections so new-looking and clean that we have never heard a word of complaint from the most fastidious customer; so there is no bugbear of soiled sections with us. By the way, I clean all the supers of sections, however made, in the way stated.

As to the doctor's inquiry as to whether we have propolis here, I would say that, so far as we know, it is as plentiful here as elsewhere; but we have far less of it than most others. I remember that, at the hotel in Madison, Wis., we explained our way of preventing propolis and burr-combs to two distinguished bee-men (A. I. Root and C. C. Miller), and they said they wished it was true elsewhere than at Forestville, Minn. Our way is to have all bee-spaces kept very close to and not above $\frac{1}{4}$ inch, to prevent burr-combs and to have every thing

about the hives where the bees have to travel made very smooth. For this purpose we now paint the inside of our hives, and have them, as well as the frames, supers, sections, and every part the bees must walk over, very smooth. And now, friends, this does lessen the evil of burr-combs and propolis, not only at Forestville, but everywhere that bees work. A rough fuzzy board is about the same to a bee as a piece of rough boggy brush land would be to a laboring man to travel through; and the first thing the sensible bees do is to make the ways they must constantly travel as smooth as possible. This they do by gnawing, and varnishing with propolis; and I am now certain that all frames should be very smooth, and may be dipped into proper paint with profit; and if only one side of the hives is painted, the inside should be preferred, as it keeps the wood from being soaked with water in winter, and injuring the colony's health and causing the wood to warp and check. Warped covers have never troubled me; but they are carefully made, and both sides well painted.

I have never used wide frames in connection with drawn combs; but I have invented a new super composed of peculiar wide frames in connection with my slotted and cleated separators, without any section case, that is not only cheap and handy, but keeps all sides of the sections entirely clean; and the readers of GLEANINGS shall know all about it soon.

In closing I will admonish those keeping sections over for future use to pile up the supers and cover from the light.

I hope I have made the method of profitably using drawn combs plain.

Forestville, Minn.

[This is indeed an important question, and I believe our friend Taylor has hit upon the proper solution of that problem of unfinished sections. At the convention in Chicago one or two reported very favorably regarding the Taylor method of leveling down the combs; and I was satisfied that the comb-leveler was a good thing, and a very important adjunct to the apiary. I should like to hear from our readers who have tested the Taylor comb-leveler; and even if it does give our old friend a little free advertising, it is all right. A good thing should occasionally be pushed along, and perhaps this is one of them.—ED.]

LONGEVITY OF BEES.

WHY DO THEY LIVE LONGER SOME SEASONS THAN OTHERS? DEAD BROOD; BEES DYING BY THE THOUSAND; IS IT A NEW DISEASE? AND IF SO, WHAT IS THE CAUSE?

By C. Davenport.

The season of 1895 has in this locality been a peculiar one in many respects. The loss of bees around here during the winter and spring of 1894-'95 was fully a half. I lost more than half of mine, so last summer I ran only one yard, and this is all I intend to run in the future,

for I have bought a piece of land and intend to follow farming in connection with bee-keeping. But as I shall have a very favorable location for bees I expect to keep profitably about 150 colonies in this yard.

Now, perhaps it may interest some for me to give my opinion as to the cause of the large loss of bees here last winter and spring, and to describe some of the things in regard to bees that took place the past summer.

Although it was very dry here in 1894 we had a fair fall flow which lasted very late, and colonies went into winter quarters very strong in bees, especially young bees. But I believe there are other things of more importance for the successful wintering of bees than to have plenty of young ones in the fall. One summer I had a strong second swarm issue from a large box hive. I do not remember the date, but it was just before basswood blossomed. The queen of this swarm was lost on her mating-trip, or in some other way, for I am certain that they did not have a laying queen at any time during the summer. I thought I would let them do without one, to see what they would do. They were hived on combs that contained considerable honey, so they did not have much room to store below; but they filled up what room there was, and then, instead of working much in the sections, they took the world easy.

In the fall I thought I would unite what few of them were left, with some other colony; but on coming to examine them I was surprised at the amount of bees there was left. There seemed to be nearly as many as when I hived them; so in order to experiment further they were put in the cellar, where the rest were. They came out in good shape in the spring. A queen was given to them; and although they dwindled away very fast, they pulled through all right.

Now, in this case the workers lived at least 10 or 11 months, not only a few, but thousands of them. But they would not do so every year. If the same thing had been tried the past summer I do not think there would have been a live bee left after they had been in the cellar a month.

I believe bees live longer some years than they do others. In the fall of 1894 there was a good deal of honey-dew gathered in this locality. This, or something else, caused the bees to have diarrhea after they had been confined for some time. I think it was the honey-dew that caused it, for colonies that had sugar stores did not have it. Still, I have wintered bees on honey-dew in first-class shape; in fact, last winter some colonies wintered in good condition on it. Again, some that died with honey-dew stores did not get the diarrhea. They seemed to fall right down from the combs, and die without a struggle. What caused this

difference in some cases, where the stores were the same, gathered from the same yard, and the colonies side by side in the same cellar, is more than I know. But these cases were exceptions; for most colonies that were on stores that they gathered got the diarrhea, and were in poor condition when put out in the spring. Mine were put out the latter part of March, and for a week or two every thing was very favorable. But suddenly the field-bees commenced to die by the thousand. Strong colonies were, in a few few days, reduced to a small nucleus; many colonies perished outright, and this when the weather was warm and mild. The bees were at the time working on a species of willow from which they were getting large quantities of honey or honey-dew. I felt sure that this was poisonous, and that it was the cause of so many colonies dying around here last spring. On examining these willow blossoms with a strong glass they were found to be alive with a small species of louse. Some around here thought that the reason the field-bees died off so suddenly was because they had poor winter stores, and that they were, therefore, in a feeble condition when put out in the spring, and able to stand but a few days of hard work. I do not think this was the reason, because I had some colonies that had pure basswood honey, and some that had sugar for winter stores, and these colonies suffered as badly as the rest.

About the time these willow blossoms were gone there commenced to be a good deal of dead brood. It seemed to die in all stages, and this dead brood continued all summer. It was not foul brood, although it resembled it somewhat. Every colony I had was affected with it, some more so than others. I do not know what it was, or what caused it. I thought at first it was caused by poisonous honey; but that could not have been the case, for this dead brood continued as long as there was any brood reared.

Last fall I put some colonies into clean hives on frames filled with foundation. Others were put into new hives on new empty frames. Others I treated the same as one would for foul brood, giving frames with starters first, then changing again. But in all cases, as soon as new brood was started it commenced to die as badly as before. Some queens that I got from a distance were introduced to some of the worst-affected colonies. In some cases this changing of queens seemed to help; in others, it did not.

Just before white-clover bloom the workers took another spell of dying. They would come out of the hives mornings soon after sunrise, crawl around awhile, then die. Their intestines seemed to be full of thin transparent liquid of a very sharp and acid character. While this lasted only a few days, some colo-

nies were considerably weakened. Late last fall some colonies were affected with the same thing again. From some hives there would come out hundreds, and die during the day. Some of them were so reduced that, in some cases, I united four or five together before putting them into the cellar. My opinion is, that these peculiar conditions were caused by the character or kind of stores gathered. But I can not understand why some colonies should be affected worse than others.

Southern, Minn., Jan. 2.

[At the Illinois State Convention in Chicago, two or three reported this same dead brood, and bees dying, as you speak of. From the description given, as in your case, it was plainly not foul brood; but what it was, no one seemed to know. There have been repeated letters on the same thing, and we had it one season in our own yard and part of another. We did nothing for it, and it finally disappeared of itself. We shall have to conclude that this dead brood is probably a disease, with characteristics very similar to those of foul brood, but differing in that it has no effect on bees. And now the questions that I should like to see solved are these: (1.) Is it a case of poisoning, or (2) is it a real disease caused by bacillus, similar to that of foul brood? 3. If so, can it be cured. In answer to the first question, Mr. Davenport seems to feel that it is not a case of poisoning. In answer to the third question—if he is correct, treating the dead brood the same as foul brood does not have any influence so far as the cure is concerned. Perhaps some of our German bee-keepers, especially scientists across the water, can give their American cousins a little more light. While we may be, and probably are, ahead of them in practical apiculture, owing perhaps to the favorable conditions on this side, they are certainly ahead of us in scientific research.—ED.]

EUCALYPTUS HONEY.

HONEY FROM AUSTRALIA; MAILING-PACKAGES.

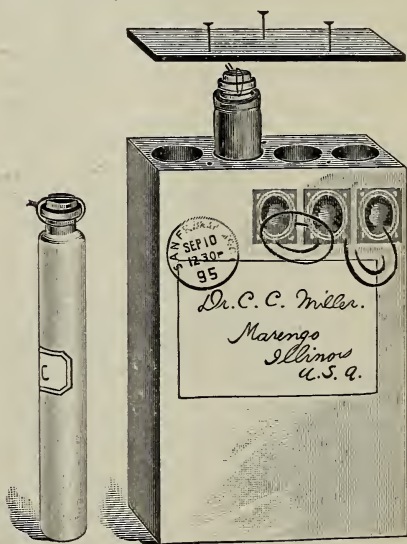
By Dr. C. C. Miller.

Mr. J. D. Ward, of Sydney, New South Wales, has sent me six samples of Australian honey, all of it eucalyptus. I had no idea that, under that one name, there could be such a variety. The samples are marked A, B, C, D, E, F, and I'll try to tell you what they look like.

In the first place, however, I wish you could all see in what nice shape the samples came. They are in six bottles, each six inches long and $\frac{5}{8}$ in diameter, corked tight, and covered with sealing-wax. In these long slender bottles they present a very fine appearance, as evidenced by the exclamations of delight of the women on seeing them. If I wanted to sell honey by sample I should copy closely after Mr. Ward's example. And the packing could hardly be improved upon. A piece of $1\frac{1}{2}$ -inch plank has 1-inch holes bored into it to receive the bottles, each bottle being wrapped in paper so as to make a close fit, then a thin board cover screwed on.

Describing them, Mr. Ward says: "A is iron-bark and gum; B, C, D, and E, varieties of box; F, assorted gums. A and B are from my own bees, located 30 miles from the sea. F is from the coast close to the sea. C, D, and E are from the mountains."

A looks for all the world like a nice sample of light-yellow beeswax; and before opening it I had to look at the accompanying letter to assure myself it was not so. It is candied solid, and I'm describing them just as I received them, for I haven't melted them. The flavor is peculiar, and I do not altogether like it. "A little rank," one of the tasters called it. I have been told that, on becoming acquainted with this flavor, one likes it; but of course I can't speak from experience.



A MAILING PACKAGE FOR SAMPLES OF HONEY.

B is also granulated with a fine grain, beautiful in appearance, very light-colored, looking a good deal like linden, slightly more of the cream color in tint. It has the peculiar flavor in a less marked degree than A; and, after tasting it and appearing to study over it for a minute, Mrs. Miller said very decidedly, "I like it. It has a kind of candy taste."

C is very light in color, evenly granulated, but not yet solid. Mrs. Miller likes it. Emma likes it better than B, and I think I like it less. I suspect it is not the easiest thing to tell just what one does think of these samples as compared with each other, especially when not many minutes intervene in the tasting.

D is partially granulated, and is the darkest sample in the lot—at least the duldest, for it inclines the least bit toward perhaps brown as compared with the bright color of A. The flavor approaches that of A, but Emma thinks there's a shade of maple-sugar flavor mixed with it.

E is not granulated in the least; of heavy body, clear as water, and almost as colorless—just a tinge of amber in it. It would be a very hard matter to find a sample of honey presenting a finer appearance. Emma says, "I rather like it." Mrs. Miller leaves out the "rather." I think I like it better than any of the preceding. Whether its being free from granulation has any thing to do with the preference I can not say.

F is in appearance the same as E, with just a little deeper tinge of amber. The flavor is also a little stronger, and Mrs. Miller still prefers E; but I'm not sure but I like F the best of the lot. It's not merely a milder flavor than that of A, but the flavor is different.

I intended to melt the four granulated samples; but on further thought I'll send the whole lot just as they are to Medina. You Medina people have more experience in sampling, and your judgment may not at all agree with mine.

If these samples were submitted to the palate of the general public, I suspect there would be great diversity of opinion. Some would like all of them, some none; some would like part and dislike part; and between these three there would be all the varying shades of opinion. The liking, too, might increase on acquaintance.

Marengo, Ill.

[The cut which we have made will show very nicely the style of package in which this honey came so long a distance and in such perfect order. The bottles appear to be none other than the long medicine-vials used by physicians in their hand-grips.]

There is a plenty in each sample to taste and to inspect as to body and color. Many of the mailing-vials sent us are too small to get a real good taste. Sometimes I find I want a "good big taste" in order to get a fair idea of the honey.

Now, please don't ask us to supply these. Of course, if there should be a substantial demand for them we would furnish them.—ED.]

--- HONEY-SELLING THROUGH COMMISSION HOUSES.

PURE BOTTLED HONEY IN CHICAGO; A REPLY
TO S. T. FISH & CO.'S LETTER.

By Geo. W. York.

Dear Mr. Root:—I was greatly interested in the article by Mr. S. T. Fish, of Chicago, published on page 16 of GLEANINGS for Jan. 1. I was interested for at least two reasons; viz., 1. On account of the boastful tone of the article; and, 2. For the several instances of misleading statements.

Mr. Fish says he bought two carloads of Utah honey, Oct. 26, paying cash therefor, about \$5000, and that "no other firm in this city dared risk a venture of this kind," etc. The facts are these: The two cars contained 48,000 pounds of comb honey; but nearly 5000 pounds of it went to another commission house, which, at 10 cents

per pound, was about \$500 less than the amount he says he paid for the two cars of honey.

Again, I know that one other firm offered \$5100 cash for the two cars; and that there was at least another firm on the same street abundantly able to buy and handle that honey. While Mr. Fish may be a big "fish" in a big river, still there are others just as big in the same old stream.

Mr. Fish also refers to their now putting up extracted honey in glass bottles for the grocery trade, and that he "can now say it is possible for the consumer to procure pure honey in small packages." He says, "This is something we could not say a year ago." Did I not know better, I might possibly believe such assertion. Two years ago this winter I began to bottle pure honey, and sold it through the groceries. Also, Mr. B. Walker—the tall Michigan honeyman—has, for several winters, put up pure honey in tin pails and glass bottles for the retail trade; and Mr. F. Grabbe has done the same thing for a good deal over a year past. The latter gentleman supplies about 200 of the best groceries with pure extracted and comb honey.

In view of the facts as I have given them, it shows that in one case, at least, too much personal horn-blowing is apt to be somewhat "fishy."

All the really large and reliable honey-dealers that I know in Chicago can be counted on several less than the fingers of one hand.

THOSE ATCHLEY LESSONS IN BEE-KEEPING.

I have been somewhat amused at the sparring that has appeared in some of the bee-papers—and notably in GLEANINGS—with reference to the "Lessons in Profitable Bee-keeping" that were reprinted in the *Southland Queen*, and indirectly credited to the *American Bee Journal*, only in the first issue of the *Southland Queen*, when they began. Having paid for those "Lessons" when they first appeared in the *American Bee Journal*, over the name of "Mrs. Jennie Atchley," beginning with May, 1894, of course they belonged to the *American Bee Journal*. I electrotyped them as fast as they were printed, for the purpose of putting in book form afterward, "Mrs. Atchley" paying for the electrotype plates.

Upon deciding to change the conductor of the "Southern Department" in the *American Bee Journal*, I shipped the plates to "Mrs. Atchley," and they were used in the *Southland Queen*. The correct way was to have credited them to the *American Bee Journal* immediately at the beginning or at the ending of the Lessons in each number when reprinting them. But the error can easily be overlooked, as many people are unfamiliar with the publishing business, and will have to profit by actual experience.

Of course, any one who so desires can print those Lessons, as they were not copyrighted

when first published; but very likely no one will care to use them, as they cover mainly such matter as can be found in almost any of the books treating on the subject of bee-keeping. At any rate, my permission is hereby given to anyone desiring to reprint them, if, when doing so, proper credit is given the journal in which they originally appeared.

Chicago, Ill.

[S. T. Fish & Co. probably did not intend to misrepresent; but having looked over the matter somewhat while I was in Chicago I am sure Mr. York is right, at least in what he says regarding pure bottled honey having been sold by others than S. T. Fish & Co. The correction should be made, for, as Fish & Co.'s article stood, it was an injustice to Byron Walker and others who, we know, have handled pure honey only.]

If the *Southland Queen* had credited the Lessons to the *American Bee Journal* in each issue of their own paper, there would not have been this misunderstanding. When I spoke favorably of the Lessons I referred to an issue containing them next following that issue in which credit was given. As Mr. York says, it is not enough to give credit in one paper.—Ed.]

A MONUMENT TO FATHER LANGSTROTH.

A FUND TO BE RAISED BY BEE-KEEPERS; VOLUNTARY CONTRIBUTIONS ASKED FOR.

By J. S. Hartzell.

I have been reading with interest the memoirs of the Rev. L. L. Langstroth, by different authors, and published in your esteemed journal. It appears more familiar to me, and I presume to the apicultural world, to call him "father Langstroth," as we recognize in his inventions a new era in the keeping of bees; and those of us who are engaged in that pursuit, and endeavoring to keep apace with improvements, recognize in him not only a standard author, but authority in all things pertaining to keeping bees for profit. We also recognize in him the inventor of what is now termed the "standard" frame and hive—he who brought from chaos, as it were, to light, or enlightened the world upon the great subject of keeping bees for profit. Much has been written concerning his worth as a Christian, citizen, apiarist, friend, and neighbor; but most astonishing to me is, of all those who have written concerning him, not one has ventured to propose to perpetuate his memory or mark his last resting-place by erecting a suitable monument, and one worthy so noble a personage as he. I desire, therefore, friend Root, that you or Dr. Miller, or some of our most worthy fraternity, formulate some system by which a taxation, as it were, of the apiarists of the United States, and all others who desire or will contribute, might set apart a certain amount for the erection of said monument; and when sufficient has been subscribed and paid in, appoint a committee to draw plans and specifications for the erection of it.

Many plans are laid for the raising of money for various purposes. One I saw a short time since requested the person addressed to send a penny for every year he was old. The amount so contributed was for the purpose of building a church or canceling a church debt—I can't call to mind which.

Now, can not a formula be adopted for the purpose of erecting a monument to father Langstroth's memory, similar to the above, or, say, send a penny for each colony of bees kept. I think all the bee-keepers should be interested in this, and feel it one of the grandest if not the grandest privilege of his life to contribute toward perpetuating the memory of so noble and Christian a man as father Langstroth.

I don't know how the brotherhood of bee-keepers feels toward applying a mite, as it were, to what I might consider a great object and a lasting tribute to the memory of the noble dead. Let us give as the Lord requires—cheerfully.

Addison, Pa., Jan. 14.

[I am very glad, friend Hartzell, that you have set the ball rolling. Dr. Miller, with whom I talked a few days ago, was very desirous that some scheme should be formulated (for the Dandants had already corresponded with him) and put into action at once.]

I know that times have been hard with bee-keepers; and I know, too, that there is a demand for money on every side; but still I believe there are hundreds of bee-keepers who would like to contribute something toward this fund, and I am therefore going to ask for voluntary contributions of whatever you may feel able to give. As some of the amounts must necessarily be small, we will not publish the list of names unless so desired by the donors. The Dandants have already given handsomely, and our firm can scarcely afford to do less. I also feel sure that other supply manufacturers will be willing to give their proportionate share.

The funds can be sent to us or to any of the bee-journals, but be sure to say for the Langstroth monument fund. When they are all received the amounts will be forwarded to Mrs. Cowan, to purchase such a monument as her own judgment and the generosity of the bee-keepers will allow.

After the monument is secured and in place, GLEANINGS would ask for a photograph of it to show to the readers the burial-place of our dear and respected Langstroth, and the last testimonial from his bee-keeping friends.—Ed.]

THE HIVE MAP.

WHY IT WILL NOT BE A SUCCESS AS A GUIDE TO THE BEST HIVE TO USE.

By C. A. Hatch.

Do you realize, Mr. Editor, what a contract you have on your hands when you agree to print a map of the United States showing the kind of hive used in each place? The first step you would have to take would be to have a complete map of the honey flora of each location, otherwise there would be no difference in

location, and, consequently, a hive that is good for one place would be a good one for the same flora in any location. For is it not an axiom that the only difference in management required for different locations is caused by different honey sources?

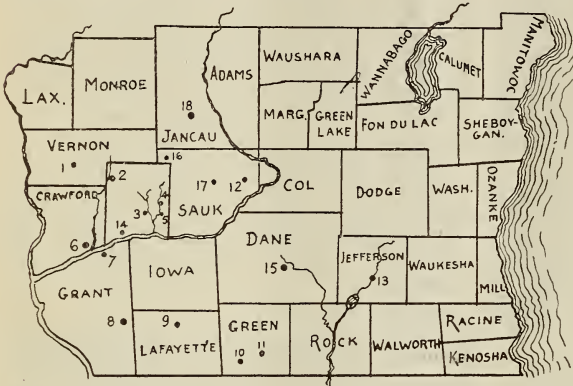
But are you sure that location makes as much difference in the hive question as some of us have been led to think? After studying the inclosed map in connection with the honey

25 miles separating any of the places. Calamine and Platteville should have about the same honey sources, and yet France & Son's apiary is run on the large-hive plan; and Mr. Murray, at Calamine, thinks eight frames are just the thing. I am afraid that, if you were to hand this map to a beginner, and tell him to select from it the best hive for his neighborhood he would be as much in the fog and doubt as the waiter was who asked the German which he would have, tea or coffee, and he answered, "Yes."

But let us look at the map. The places are indicated by numbers, thinking that so much writing on so small a map would mix it up too much. I am not positive that I am right as to the kind of hive used in all cases; but if wrong, the one wronged can set himself or herself right by so reporting to you.

There, friend Root, don't you see location has but little to do with the matter? When you get that map complete I want a copy if it does not come too high.

Ithaca, Wis.



MAP OF WISCONSIN, SHOWING THE SIZES OF HIVES IN USE.

flora of each place I am inclined to think that management in the spring has more to do with it than all else; and perhaps our early choice and prejudice have almost as much to do with the kind of hive used as any thing. If a bee-man prefers an eight-frame hive, he has, as a rule, commenced with that kind, and has

[I said the hive question was to be discontinued; but this article by C. A. Hatch treats of the subject in a little different manner than it has heretofore been considered. As friend Hatch presents the matter in his map, it seems to me it knocks the arguments of both the eight and ten framers into smithereens; but then, if we could see added on to the end of those lines in that table the average number of

No.	Name	Hive Size	Honey flora
1.	Wm. Cox, Viroqua;	10 frames.	clover, basswood, and fall flowers.
2.	McCarty, Viola;	8 "	" " " "
3.	Mrs. Pickard, Rich'nd Ctr.;	12 " (Gallup)	" " " "
3.	Mr. Moffit,	8 "	" " " "
4.	C. Ludker, Loyd;	10 "	" " " "
4.	D. Rowe,	10 "	" " " "
5.	C. A. Hatch, Ithaca;	10 "	" " " "
5.	Late S. I. Freeborn, Ithaca;	12 " (Gallup)	" " " "
6.	Mr. Evans, Wauzeka;	large hive.	" " " "
7.	M. M. Rice, Boscobel;	" "	clover, bassw'd, horsemint, fall fl'rs.
7.	Late B. F. Rice, Boscobel;	" "	" " " "
7.	Late Ed. Pike, Boscobel;	" "	" " " "
8.	E. France & Son, Platteville;	" "	clover, basswood, and fall flowers.
9.	Mr. Murray, Calamine;	8 frames.	" " " "
10.	Harry Lathrop, Brown'tn;	8 "	" " " "
11.	Mr. Hoffman, Monroe;	8 "	" " " "
12.	F. Minnick, Baraboo;	10 "	" " " "
13.	The Grimms, Jefferson;	8 "	" " " "
14.	F. L. Snyder, Orion;	10 "	" " " "
15.	D. D. Daniber, Madison;	8 "	" " " "
15.	Dr. Vance, Madison;	8 "	" " " "
15.	Spaninburgh, Madison;	large hive.	" " " "
16.	O. C. Blanchard, Ironton;	" "	and fall flowers.
17.	C. Randall, Buckley;	8 frames.	" " " "
18.	F. Wilcox, Mauston;	8 "	" " " "

adapted his management to that; and if he is a success he thinks his hive is right, and the same is true of the ten-framer.

Viola, Richland Center, and Loyd have the same honey flora; viz., clover, basswood, and fall flowers; yet at Viola we find Mr. McCarty, an eight-framer; and at L. and Richland Center, those who use a larger hive. Climate can not make the difference, for there is not over

pounds per colony for the last ten years, perhaps we could better decide which gives the better results. For the present, at least, we shall have to conclude that they all get honey, and they all get good results. Why? Because each size or form of hive can be made to fit the locality and the man.

As to a general map for the whole country, if all took hold of it we should have the map; but so far only two have ventured their assistance. —ED.]



GATHERING THE WHEAT FROM THE CHAFF.

Question.—In reading the bee-papers I find much that appears to me as chaff, while there is some *real wheat* in nearly every number of any of them. Now, how can I separate this wheat from the chaff, and have it so I can at any time turn to and find the wheat, without reading the chaff all over?

Answer.—This is a question which once bothered me a good deal, and one on which I have written in the past; but as it is a question of importance, it may not be amiss to repeat somewhat, especially that those just starting may be able to use our bee-literature to the best advantage. We find that our successful men are those who read the most closely along their line of business, and put what they read into practice. Now, in order that we may profit by what we read we must remember it at the time we wish to put it in practice; and as much which is valuable in our bee-papers is published out of season, it is hard to remember it till the time of practice, unless we have some means to help us remember it at the right time.

While studying along these lines, a few years ago, I purchased a smallish leather-bound book containing blank leaves to the number of sixty; but it is necessary to have only twenty-four. This book I arranged similar to an assessor's, which has the letters of the alphabet from A to Z on the outside margin of the leaves. Cut the leaves just as you would to letter them; but instead of lettering them write on the little square of the first, "Jan. 1;" on the second, "Jan. 15;" on the third, "Feb. 1," and so on, giving one leaf, or two pages, for each half-month to the end of the year. When GLEANINGS first comes it is carefully read and laid away in a place set apart for it, and the other papers which I take are treated in the same way, so that at the end of the year they are in perfect order to be bound, which I generally do myself, by driving wire nails through and clinching them, which makes each volume handy when I wish to refer to them.

In reading, the most important part is to preserve the "wheat" in our literature, and make good use of it after we have it all preserved in good order. With the pressure of work that is upon me, I can not find time to read any volume a second time to get the many points in it which may be of value. If I were obliged to read all a second time to get the points I considered of value to me I fear I should never get them at all. I read once all there is in a paper, and then I want it so that I can get at what is of use to me, in a moment, when want-

ed at another time. To do this, whenever I sit down to read a fresh paper I have a pencil with me; and when I find a new idea, or an old one I wish to experiment with farther, I mark it. In some instances the marks will embrace a whole article, while others call attention to a few lines. In future years, or at any time I wish to find that which is really valuable to me in my volume, all I have to do is to read the marked passages and thus get the cream of the whole year in a little time.

So far I could get along without any book or any thing of the kind; but it oftener than any other way happens that some of the best ideas are suited only to certain seasons of the year, and that season more than six to nine months from the time that I read it. As my memory is not sufficient for set times and dates, I must have some means to remind me of the valuable points just when they will be of use to me, and this was what led me to get and fix a book as above. This book is within easy reach of the chair which I generally occupy when reading, together with a pencil, so that, when I come to any ideas or passages, parts of an article, or an entire article, which I think will be of use to me in the future, I mark it with the pencil, and then jot down the page and subject in my book, under the date to which it is applicable. Thus I have all the matter which I consider valuable to me, contained in the numerous papers which I read, arranged with reference to the time it is to be used, all before me at a moment's notice in this book. On any date, between Jan. 1st and Jan. 15th, when I have time, I open this book to January first and look over all there is on this page; and if, for instance, I find "how to put foundation in sections," that being a different way of doing this from any which I had previously used, as given in some one of the papers which I have read during the year 1895; and as this is the time I am putting foundation in sections, preparing for another season's honey crop, I try the plan by way of experiment, if I chance to find such a note regarding putting in foundation in this book. To explain more fully: In one of my bee-papers I find how the honey crop may be increased without any desire on the part of the bees to swarm by unqueening the colony at the beginning of the honey harvest. As the last half of June would be when I could make use of this information to my profit, if I ever could, I turn to June 15th (by putting my thumb on that date when opening the book), and write, giving the name of the paper, the year, and the page, after which I say, "Unqueening colonies for non-swarmling and a greater yield of honey." When this date (June 15) arrives I look over all that is written there; and as I come to this I take down the volume and turn to the place, and there is just what I want, at the right time, for the bees are already bringing in the

first honey of the season. So I go to work and try the new plan on the morrow, by unqueening from two to five colonies, working the rest of the apiary in the old way till I see how this works. If the unqueening plan proves valuable I mark this place on the book with a star; or if worthless, I draw my pencil across the whole line, thus crossing it off.

If I have made this plain, and I think I have, it will be seen that I have all of real worth, to me, of many volumes in this book, while the matter which was worth only once reading is left out.



MORE ABOUT SWEET CLOVER; WHEN IT BLOOMS, ETC.

Friend Root:—I see in Nov. 15th GLEANINGS that W. W. K. wants information as to what season of the year sweet clover blooms. It blooms here from July 1st until frost kills it. It is so plentiful here that, for the last ten years, my crop of white honey has been gathered from it exclusively. For the last two seasons my crop of honey has been very light, because the clover did not seed itself, owing to the extremely dry weather.

Sweet-clover seed must be sown and make a stand in the fall, for next season's bloom. It never blossoms the same year it is sown. If W. W. K. wants to raise it for his hares, he can sow it in early spring; and if the season is a wet and growing one he could cut it in the fall. It would probably get to be nearly a foot high, and should be cut young before it gets near blooming; for, after that period, it becomes too woody to be eaten by any kind of stock. It is with hares as it is with other kinds of stock animals—they must be educated to eat it. I have tried feeding it to my Belgian hares, but they do not relish it. I presume, though, after feeding it exclusively, they would, like other stock, learn to like it.

Sweet clover is not a bad weed. You turn it under before it seeds, and that kills it. It is an excellent fertilizer when so plowed under.

G. J. FLANSBURG.

South Bethlehem, N. Y., Nov. 19.

AGE OF BEES.

Early last May I hived a swarm of Italians, and next day I found their queen dead under the alighting-board. I gave the colony a queen-cell. The weather was unusually cool at the time, and, several weeks after, I noticed that the hive was queenless; and on opening it I found that the young queen had never emerged from the cell. Laying workers being present,

no effort was made to requeen. In July, noticing that the hive was very heavy, and fearing robbers, I removed the hive and substituted a three-frame nucleus hive on the same stand, and drove the bees from the old hive with smoke. They took refuge in the nucleus hive, which was furnished with frames filled with foundation. Desiring to see how long they would live without a queen, and hoping that they would draw out the foundation, I let the bees remain in the nucleus hive all summer. They drew out the foundation in one frame in a patch about 5 inches in diameter, and survived until October 16th, when the last one perished. This is evidence that bees may survive for six months of summer—an occurrence that seems a little unusual in view of what is usually taught in the books. The swarm was secondary, and the queen, consequently, a virgin, and no brood was raised, so that the last survivor was over six months old.

During an experience of four years in keeping bees I have had as many as five swarms lose their queens during the first week, and gradually dwindle away during the summer, always building crooked and irregular combs, and perishing in the fall; but I have never known bees to survive quite so long as in this instance.

Columbia, Miss., Dec. 14.

T. S. FORD.

[The circumstance you relate is a little out of the run of the ordinary, and should not be taken as evidence showing the age of bees under average circumstances. When death is staring them in the face, bees have a fashion of economizing their stores, or even their energies, when it is evident the effort will reduce their numbers. If stores are scarce they will cut down or stop brood-rearing in order to save them; and you have given us an incident of how they will, under extraordinary circumstances, save their bee life. The age of bees under all circumstances can best be determined by changing the color of the bees by the introduction of a queen whose bees differ in color or marking from those already in the hive. As the new bees come on, the old bees will go right on spending their energies as before. When an Italian queen is introduced to blacks, or *vice versa*, the old bees, after a heavy honey-flow, will begin to disappear pretty fast in six weeks. After the honey-flow I have seen blacks and hybrids in a colony for six months and more.—ED.]

A GOOD STRAIN OF FIVE-BANDERS.

I will continue breeding the five-banded Italians, which have been so much condemned in GLEANINGS; but I am glad to say I have a strain that has not met with so much condemnation; and as honey-gatherers have proved themselves equal to the best. I do not think any strain of bees has met with greater success in this line than mine have. Among other letters speaking of their praise I have one giving the statement where one of my "dollar" queens gave a surplus of over 70 lbs. of choice comb honey by the side of two of A. I. Root's six-dollar queens that did not store enough to winter. This is only one instance among

many, although this is rather an exaggeration to most of them. It is unjust to class all five-banded bees as the same, although the name "five banders" is a misnomer, and should never be used.

CHAS. D. DUVALL.

Satsuma Heights, Fla., Dec. 22.

[I have never claimed anywhere in these columns that *all* five-banded bees were inferior. If you can find such a statement I'll give you—let's see—our very best breeding-queen.—ED.]



THE CHICAGO CONVENTION.

I MAKE no formal report of the Illinois State Bee-keepers' convention which I attended in Chicago, Jan. 9th and 10th; but I have made various references to what was said and done, in footnotes and editorials. My report, or the remainder of it, then, will probably be made up of similar references in future. For a full detailed report, see the *American Bee Journal*.

The meeting, I am happy to say, while not large in attendance, was lively and enthusiastic. Under the leadership of Dr. Miller, real live practical questions were discussed.

Chicago is an ideal place for holding conventions. There we find the great honey-market, perhaps the greatest in the world, and there the great and enterprising newspapers fairly tumble over each other in their rivalry to get out the best and fullest report of every convention in the city. The *Chicago Record*, an enterprising 12-page paper, sold for only 1 ct., in its issue for Jan. 10 gave a fairly good notice of the convention. Some of us were a little taken back as to the way we were pictorially represented. It seems the *Record* has a fashion of giving pictures of those who figure in the various conventions that meet there from week to week.

The meeting of bee-keepers was no exception. A few of the members had a good laugh at my expense over the picture that represented your humble servant with the "big head." At the earnest request of two or three I reproduce the picture itself. Well, here it is. I should have been very much "mad" were it not for the fact that the *Record* artist put a "big head" on the others. Those who received this doubtful honor besides myself were C. Schryer, M. M. Baldridge, Dr. C. C. Miller, and Editor York; but their pictures looked as much like them as a queen-bee does like a clothes-pin, and I forbear "showing them off."



SENDING HONEY TO COMMISSION HOUSES; TRICKS OF THE TRADE; SOME OF THE DANGERS TO BEE-KEEPERS POINTED OUT.

IN our last issue I had something on this same subject; and being desirous of pursuing it further while in Chicago, both in the convention and between sessions, and at commission houses that I called upon, I made it a special subject of inquiry; and I will now endeavor to give you the plain facts as I found them. At the outset I wish to say that I do not wish to cast reflections on the commission business as such. My only purpose is to point out some of the dangers, and how the misunderstandings, quarrels, and possible lawsuits may be avoided.

QUOTING HONEY AT MORE THAN ACTUAL MARKET PRICES.

Both in and out of the convention I learned that some of the houses, not only in Chicago, but other cities as well, had been making a practice of making special high quotations—at all events, considerably higher than it would be possible for them to realize in the open market. The object of this, of course, was to get consignments from bee-keepers; and in this they succeeded admirably. Well, having received the consignments these firms in many cases do not scruple to meet the sharpest competition in the open market, irrespective of what they had promised in the way of returns to the bee-keeper; and the honey will be sold for several cents lower per pound. Of course, there is complaint; but the commission house gets out of it by claiming a loss in leakage, broken-down comb honey, or poor quality all round. Again, they will claim to sell at quotations. They will quote at, say, 15 cts. per lb., and realize to the bee-keeper perhaps 8 cts. They claim that the honey was sold at 15 cts.; but after taking out the cartage, freight, commission, leakage, and other little items, they will work it around *somehow* so as to net the bee-keeper only 8 cts.

I believe I have not overstated the situation. There are many bee-keepers who can testify that they have been served this way; but it is needless to say that they are deceived by that firm only once. The trouble here is on both sides. In the first place, the bee-keeper, in looking over the market, sees the name of one firm that quotes much higher than any of the rest in the same city, and he rushes his honey off to them. If he would stop a moment he ought to see that they can not realize better prices—at least not much better—than their competitors who have been longer in the business, in all probability. But he does not think of this. He simply thinks these are better prices than he has been getting at home; and he forgets that, out of that price, must come cartage, freight, etc., and that a firm who will make this high quotation is pretty apt to make these other items much larger than they really are.

"But," you may ask, "when bee-keepers are treated in this way is there not some redress by law?" Yes, perhaps; but, as Byron Walker said at the convention, the firm may have thousands of dollars against the hundreds of the bee-keeper, to fight him; and usually the amount involved is less than a hundred dollars; and when he comes to figure up the cost of prosecution he decides to let the matter alone. If the commission house is dishonest, it will bear on as hard as it can without involving a suit.

In the first place, bee-keepers should go to their nearest bank and inquire of the responsibility of the firm to whom they propose to ship honey; but, as Byron Walker said at the convention, a gilt-edge credit may not always mean fair and honorable dealing. The suggestion was made in the convention that a small consignment be sent first, and in the mean time inquiry be made of bee-keepers or of bee-journals who may know them. The moral is, be careful how you trust *new* firms with consignments of your honey, especially when they promise to do very much better than old firms who have been long in the business, and with whom you have dealt for years, and received honorable treatment.

ACTUAL COST OF SELLING ON COMMISSION.

At one of the sessions of the convention the question was asked, "What is the usual rate of commission charged?" The replies to this showed that some firms charge 5 and others 10 per cent. But some bee-keepers say they would rather pay ten per cent commission, and get better service, and not have a long string of items charged up against their honey, than to pay 5. But, again, it was shown that some firms charge 10 per cent, and are greedy enough to tuck on all the other items besides. This question naturally followed in the discussion:

WHEN COMB HONEY SELLS IN SOUTH WATER STREET, CHICAGO, AT 14 CTS., WHAT WILL IT NET THE PRODUCER?

The President, Dr. Miller, explained that this was a very important question. As there was a blackboard in the room he desired the convention to help him make out a table of expenses. A great many questions were asked and the answers reduced to figures, the result of which was the following table, which I copied from the blackboard. The first item, as is shown, is the cost of honey; and the next items of expense are expressed in cents and tenths of a cent:

Selling price of honey per lb....	.140
Freight.....	.004
Commission @10%.....	.014
Cartage.....	.002
Loss in leakage.....	.007
Shipping cases.....	.010
Total expense.....	.037
Net cash to the purchaser.....	.103

Now, understand that these figures represent-

ed a fair deal on the part of an honest commission house. Of course, there may be mistakes; but there were quite a few extensive honey-producers who verified these figures, and acknowledged them to be essentially correct. In round numbers, then, if the honey sells on commission at 14, the bee-keeper himself can expect only about 10 cts. I must confess that the expense item of 14 cts. was very much larger than I expected; and if bee keepers generally knew the cost they would be more inclined to market around home rather than send away their honey to the crowded centers, subject to close competition, and perhaps in some cases dishonest treatment. If 10 cts. is all the bee-keeper himself gets when the honey sells at 14 cts. in the open market, in the hands of an honest commission firm, how much will that bee-keeper get if this same honey goes into the hands of a firm that is unscrupulous, or a little sharp in the tricks of the trade? Bee-keepers with whom I talked said they had in some cases been glad to get 7 and even 6 cts.; and when I asked them why they did not sue, they replied that the cost of the suit, and the chance of judgment in their favor, would be more than the amount involved.

Chicago is a great center for selling honey. The editor of the *American Bee Journal*, in commenting on this point, says:

"SELLING HONEY ON COMMISSION.—We have just been talking with the head of what we consider the largest firm of Chicago honey-dealers, about selling honey on commission. We asked particularly about the amount or per cent charged for handling honey; and his reply was that, on a shipment which sells for less than \$100 gross, their rule was to charge 10 per cent. On any shipment selling for over \$100, they deduct 5 per cent for their commission. We believe this is about right.

"The gentleman referred to above agreed with us in thinking Chicago the principal honey-distributing point in this country. As nearly as we are able to learn (and we believe it is not far out of the way), since the season for shipping honey opened for 1895 there have been shipped to the Chicago market up to this time about 60 carloads. That means about 600 tons, or 1,200,000 pounds of honey. And that would be only about one pound for each person living in Chicago! Surely that one pound wouldn't last very long—say probably a week. Then something like 50 times this amount might be consumed here every year, if it were properly distributed among the people.

"Bee-keepers have a great work ahead of them, if the public is ever to be educated to use honey as it deserves to be used. Let every one do his share to popularize the consumption of the best sweet known—honey."

I am aware that what I have said reflects rather seriously on the commission business; but I hope our readers will please bear in mind that these sharp "tricks of the trade" do not apply to *all* commission houses. As soon as one is found to be guilty of sharp tricks his quotations are dropped, so that I believe our list is now a fairly good one; but even then I think it is wise for bee-keepers, before making large

shipments, to make careful inquiries of the publishers of bee-journals, as well as of the bee-keeping friends, who may be able to give them some information. We will ourselves, free of charge, give you the standing of any commission houses, whether they quote prices for us or not. We keep in our office both the Dun and Bradstreet Commercial Agencies; and besides that we have other facilities for investigating the responsibility of any firm. It is true, we may be deceived in the reports, and may be deceived in the representations of the firms themselves; but we will endeavor to give you an honest opinion, and one very likely that may save you hundreds of dollars. It is peculiarly provoking to know, for instance, that you can sell your honey at home for 12 cts., and then send it to the city, expecting to get 14 cts., then realize only 10 cts., and perhaps a good deal less.

SELLING HONEY OUTRIGHT.

One commission firm with whom I talked (S. T. Fish & Co., of Chicago) expressed their purpose of buying, in the future, honey outright, which I am sure will be to their advantage as well as to that of the bee-keepers. Then it will be known in advance just what the honey is to bring, and the bee-keeper can decide for himself as to whether he will let the honey go or not. The bee-keeper gets his money; and if the commission house can make two or three cents a pound on the honey, that is their privilege; and if they lose two or three cents, that is their loss and not the bee-keeper's. The whole thing will then be a straight deal.

But on the other hand, with honest houses sometimes more money is realized when the honey is sold on commission than when sold outright. You see, the point is right here: The buyer, being uncertain what the market price will be in the future, desires, if he pays cash down, to buy close; and the probabilities are that he will buy at a point where he will not lose.

ADULTERATION IN CHICAGO.

The matter of adulteration received considerable attention at the convention. The editor of the *American Bee Journal* made the statement that, in a walk of five minutes from the convention room, he could take us to about 30 places where they were glucosing honey. When I called upon one commission house, their representative said that, if I had time to go with him, he could take me to places where they made no concealment of adulteration; that all I should have to do would be to assume the role of a buyer, and state that I wanted "cheap goods." In fact, the mixers would be willing, he thought, to tell me *how much* glucose they put in, so that I might know just what I was buying.

You see, friends, the point is right here: These houses are safe enough in adulterating

so long as they sell the goods for just what they are—glucosed honey; but if I, a buyer, am dishonest I can take these same goods and distribute them out to the retail trade, or to consumers direct, and label them as pure honey or not, as I choose. If I leave off my name and address, there is no one liable except the one who makes the actual sales to the consumer direct; and if he is convicted of selling adulterated honey he will be liable for only the trifling amount sold. I tell you, friends, the situation is a bad one indeed.

A few days ago we received the following letter from a firm whose name I omit. The letter speaks for itself:

Have you any empty honey-comb—that is, comb from which the honey has been extracted? We want it to use in selling strained honey. If you have not, any information which you can give us as to where we can procure the same will be appreciated. Also please quote prices.

What in the world do these people want to do with empty comb, unless it is to put it into glucose mixture, and palm the whole off as pure honey? By the heading of the letter I notice the firm advertises syrups, molasses, jellies, and preserves; and in "pure" white letters engraved on a black background, are the words "Puritan Maple Syrup." Puritan nonsense! Any firm that wants to buy empty honey-comb for the purposes specified above *probably* would not hesitate at all to sell glucosed syrup as pure maple.

Let me suggest, as a caution to bee-keepers, that they be a little shy of men who make a specialty of syrups, molasses, and preserves, especially when they claim to be manufacturers and refiners. It does not necessarily signify that they are dishonest, but the temptation is great, and some of them are not overscrupulous.

If Mr. York's statement can be relied on, and I have no reason to doubt it in the least, from some things I did see and hear, and if the representations of the house referred to are true, then it is time that bee-keepers were asking themselves if there is any remedy. I look to the Union itself, when it shall be finally reorganized, to give us some relief. I look to the bee-journals and bee-keepers themselves for assistance. I look toward new food laws, and honest officials to see that they are enforced. The Lexow investigating committee of New York, and similar committees as well, in Chicago, give me hope that a good time is coming *some time*; and that "time" will come sooner providing we do the right thing at the right time.

Now, dear friends, in closing I hope I have not given a picture that is too black. I have tried to give you one that is true. Perhaps some of you may feel that it should have been held back and "covered up;" but, dear me! what will become of us if we continue "covering up," and keeping "covered up" such sort of work as this?

OUR HOMES.

And the Lord God said, It is not good that the man should be alone. I will make him a helpmeet for him.—GEN. 2:18.

A month or two ago, when there was much discussion in our household in regard to meat diet, etc., among the different members of our family, Mrs. Root made a remark something like this:

"Look here, all of you. I eat what I choose—take no medicine at all, no dieting, yet I am the healthiest and strongest one in the whole family."

Now, this was partly true, yet it needs a little modification. Mrs. Root has for years worked more hours a day, probably, than any one of us. She goes outdoors bareheaded and barehanded, in almost all sorts of weather. She keeps warm and comfortable when everybody else is chilly; and we have attributed it a good deal to the fresh, vigorous strain of blood that she brought with her from "Merrie England," years ago, when she was only seven or eight years old. Some little time before the holidays, however, she complained of being very tired. We urged her to take a rest, and proposed to her to take our meals in the dining-room over at the factory, so as to relieve her from the monotony of grinding and cooking the lean meat three times a day, which she had been doing for four or five months before that. There was plenty of willing help all around her, it is true; but others were not so careful to cut out every little bit of fat and gristle; and when she got all ready to do the grinding, it was cheaper to do it herself, many times, than to hunt up some one else, especially when they were off at school or over at the factory at work. Thus it passed on. She has never been sick in her life—at least, not enough to call it sickness; notwithstanding, she has for many years been subject to sudden and acute attacks of pleurisy. She has always, however, so persistently objected to calling in a doctor, or even taking medicine, that she has so far recovered of her own accord, without any assistance.

About a week before Christmas she was taken with one of these usual attacks of pleurisy. She thought she had caught cold, but it did not act exactly like a cold either. She had slight chills and some fever; but when we talked about a doctor she declared she always had such chills and fevers with her attacks of pleurisy, but that, if she was careful about taking more cold, they always went away of themselves sooner or later. Her statement, that she ate what she pleased, is true. It is also true that, after cooking so much meat month after month for the rest of us who were dieting, she seemed to get a dislike for meat herself, and ate very little of it. Ernest and I had been urging her for some time to have Dr. Lewis, of Cleveland, make an examination, especially on account of the tired feeling she had complained of, and the difficulty of breathing when she lay on a particular side at night. Perhaps I might say right here that one great trouble of her life has been that she has not been able to sleep nights as I do; and she rarely if ever makes up for it by sleeping daytimes. During this attack of pleurisy, the difficulty of taking a good long breath had kept her awake much nights, and she was suffering from want of sleep. Finally the whole family protested, and said that she must have a doctor.

On one Monday morning, she had slept but little; but she so strongly insisted on getting up and starting the fire, etc., for washing, before the others got around, that she was per-

mitted to do so. She had slept so little that she longed for the morning to come. When I got back to breakfast, however, she was lying on the lounge, and I declared at once I was going for a doctor. She urged, however, that I should simply state the case to him, and tell him not to come down until further orders. He indorsed the treatment I had advised—quinine internally, and painkiller externally where she felt the pleurisy most, and thought she would get along. As she did not get any better we decided the doctor would have to be called. Then she declared she could not take the medicine the doctor would surely prescribe. It had been a great task for her to take even quinine put up in capsules. Some one suggested that we should call a certain homeopathic doctor (a distant relative by marriage), for she could stand his "little pills" or comparatively harmless doses. As soon as he came he said something like this:

"Mr. Root, why did you not send for me a week ago, or, better still, ten days or two weeks ago? This woman has 'malarial fever,' and has been having it for a week or so past. She must remove her clothing, and go to bed at once, and not get up again without my orders. We will do what we can, but she is a very sick woman."

He afterward told me that we should have to procure the very best nurse that could be found, and take every precaution, for a siege was before us. Perhaps a knowledge of the real state of affairs had something to do with it, for she seemed to give way and break down, as it were, all at once. Her determined resolution, that she was going to get well without any doctor, had probably kept her up. Every thing was done that could be done; but the doctor's predictions proved correct. The pleurisy was really a secondary affair, or a side issue, in the matter. The doctor said that I was quite excusable for being misled by it; but the minute he told me, then I recognized the well-known symptoms of my own case, a little over four years ago. One of the worst difficulties in the way of her recovery met us almost at the outset. She has always had trouble, as I have mentioned, about getting sufficient sleep when comparatively well. The trouble, now was aggravated. Our readers of a few years ago will remember what I said about bromide of potassium. I suggested it; but the doctor said he would have to exercise great care in the use of all such remedies, with the dangerous symptoms that were confronting us. There was a tendency toward typhoid fever a little further along; and the pleurisy had already affected one of her lungs so that pneumonia might set in at any moment. Malarial fever and typhoid pneumonia was not a pleasant combination to contemplate. The wished-for sleep did not come—at least, it did not come very much with the bromide. Besides, the drug did not work as nicely with her as with myself and many others. Other remedies for inducing sleep were tried, and finally chloral; but none of them were sufficient to cope with the terrible nervousness and delirium that were setting in. All her thoughts seemed to be running continually on having plenty of meat in readiness for her loved ones. Her imagination was filled with broilers, meat-grinders, pans, and kettles, and the various paraphernalia of the last work she had been doing. Just one illustration:

At about this time the women-folks at the factory sent to a florist for a beautiful bouquet of flowers, which was sent into the sick-room as a reminder of their sympathy and regard. When the flowers were shown to her, and she was told where they came from, they brought

tears of gratitude to her eyes; but in a very little time they had to be removed from her bedside. The doctor had cautioned us repeatedly against any excitement. Everybody was kept out of the room except the nurse, one of her daughters, and myself. The minister called; but it was thought best not to permit him to speak to her. While he was in the other room, however, he heard her calling to her attendant to hurry quick, for the water was "boiling over" in the vase that held the flowers. When they carried the flowers to her, and assured her they were perfectly cool and fresh, and the water was *not* boiling at all,* she smiled at her mistake; but almost before they were out of sight she was worried again about the same thing. Even the flowers she had admired so much, and which seemed to do her so much good, seemed for the time being a disturbance to her feverish, wandering mind.

Pretty soon there was talk that even *I* should not be admitted to her room. Very likely these friends were right; but it seemed the hardest of the trials I was destined to bear. With all my experience it seemed I had not yet learned the tact that is needed in a sick-room. It may be I worried her by my awkward speeches, even though made with the best of intentions. Any little thing seemed to throw her naturally cool sound judgment out of balance. The crisis drew near. She had not slept to do much good for days, and the bromide, and even the chloral, did almost no good. She begged for an opiate; but the doctor assured me it would be almost dangerous, with the tendency exhibited at that time toward pneumonia. Nature was doing its work, and the fever would soon beat an end; but it was a dangerous crisis. A little mistake, the merest trifle, might result fatally, or, missing that, her mind might lose its balance and never recover. Most of you know how often such things happen.

I have told you before that affliction and trial often bring us new experiences. Sometimes we are thus taught lessons which we *could not* be taught otherwise. During the days and nights that followed I had some new experiences. I have told you about my little prayer, "Lord, help!" all along for years past. A month or two ago I spoke of asking God's help when the water-pipes got out of order; and again when I was seeking to rescue a fellow-man from the grasp of the evil one. I told you of that surgical operation at Battle Creek, when I could do nothing to help except to pray that the great God of the universe might give wisdom and skill to the surgeon. The lady whom I prayed for is now alive and well. I have been a praying man for the past twenty years or more, as you know; but I never before in my life had had any experience like this. I have heard about wrestling in an agony of prayer. I realized something of it then. Now, please do not misunderstand me, dear friends. It would ill become me to tell you of any thing that might sound like boasting of the number of times that God has listened in answer to *my*

prayers. While I prayed during this season of anxiety and trouble I recognized that thousands have prayed for loved ones before, and God has not seen fit to grant the request. The great Judge of all the earth will *surely* do right; but we are forced to conclude that many times it is his will that we should be schooled by having the loved ones taken away in spite of the prayer; at least, God does not see fit to give us knowledge and wisdom, even in answer to prayer, to avert sickness and death. I felt that, through all my prayers, the thought should run, "Nevertheless, thy will, not mine, be done." Please remember, dear friends, that even the prayers of Christ Jesus, the son of God, were not all granted. God did not deliver him from that terrible cup; but he gave him grace to bear it. I was obliged to face this matter of the possible loss of my dear companion and helpmeet as I had never faced it before. I went over again and again the lives we two have passed together. I remembered how faithful and loyal she had been to my unworthy self in all these many years. Why, dear friends, I never understood what the words *loyal* and *faithful* and *true* meant until I knew her—no, never till *this* crisis in our lives. All through the day something would come up where I wanted her counsel. Things had gone wrong, and I was tempted to right them with my natural vehemence. But it has been for so many years a practice of my life to first consult her, and be guided by her gentle charity, rather than by my own vehemence, that I felt as if a part of myself were gone when I could not talk to her about our affairs. A dozen times a day I would say to myself, "Well, I will go right over and ask Sue what she thinks about it." Then came the awful truth, "Why, the doctor has actually thought it best that I should stay away from her sick room unless she should call me." In a little time the same experience was gone over again. But the question came up as to what could be done to bring the much-needed sleep to the loved sufferer. I was debating it almost constantly; and *again* and *again*, without thinking what I was about, I would say to myself "I will ask Sue what she would do in such a crisis." Then it would burst upon me, "Oh my God! *she* is the one that is in danger. It may never be my privilege to consult her again while God permits me to live on this earth." And then I began groping in the darkness, and questioning as to what I should do without her for a counselor. I thought of my other friends and relatives. I remembered I had Ernest and John to consult with. They were wiser in many matters than the dear wife; but they were *men*. There are many delicate things in life—there are matters that pertain to spiritual things, where I do not want a man's counsel. I want a woman, with her great charity and woman's intuition. Well, there were other women. There were my own daughters. Yes, *thank God*, they are *her* daughters, and they may in time have her experience and gentle charity; but they are all yet young. There is nobody in this *whole wide world* who can *begin* to take her place. Perhaps I might say right here that my mind began to turn toward my eldest daughter, Mrs. Calvert, as it never had before; and I asked God to forgive me that I had never thanked him for her and the other daughters as I should have done.

With all these great trials, the more I prayed, and especially the more I prayed for the influences, and counsel of the *Holy Spirit* in this time of trial, my own unworthy, heedless, selfish life came up before me. If I understand correctly, one of the principal offices of the Holy

*It seems a little strange that malarial fever should cause such queer visions of water, slops, and dampness. During my second attack in Portland, Ore., one night I could not sleep, because, whenever I closed my eyes, I saw my boots, that stood near my bed, full of water, and running over. Again and again I raised up and leaned over to satisfy myself. There were the innocent boots, as dry and warm and comfortable as could be, on the carpeted floor. Just as sleep began again to spread its balmy wings about me, there were the boots brimful of water pouring over the sides of each boot-top. The raindrops on the roof outdoors perhaps suggested a part of the illusion, for you know it almost always rains in Oregon, in winter.

Spirit is to show us our faults and our shortcomings. Perhaps we as a family all needed the severe lesson God was teaching us. We had got into a fashion of letting mamma bear too many of the burdens of the household. Her tasks were, it is true, self-imposed. She did them willingly—nay, more: she did them *lovingly*; and so it got to be a sort of *fashion* to leave things where we used them last, scarcely thinking how much of her time and strength it took to put away things after us—to keep the house neat and tidy, and to minister to *all* her loved ones. Jesus said he came not to be ministered unto, but to minister. Now, we should be very careful not to let the *mother* of the household appropriate *all* of this beautiful text to herself. Sometimes nothing but affliction and trial like the one we were passing through will help us to realize how we have been living. Oh what resolves, through those days of anxiety and suspense, to do better, whether God should hear my prayer or not! The climax was coming. Our heavy shoes or boots were exchanged for something that would make no noise; and then we went about the house on tiptoe. Even the nearest friends kept out of the room. The doctor confessed he was unable to produce any thing that would quiet her nerves and not be in danger of doing more harm than good. I was told she begged for morphine. I went into the room on tiptoe. As soon as she saw me she put out her hand and said something as follows:

"Dear husband, can't something be given me to make me sleep? I shall surely go wild, and lose my mind, unless sleep or rest comes to the aid of my shattered nerves. If morphine will not answer, please give me some chloroform. Have you no chloroform in the house—nothing to give me a moment's rest? I can feel that I am soon to lose consciousness if this terrible strain goes on; and if it is to be, I almost long for the time, if it will help me to be unconscious of my suffering."

The nurse stepped out of the room just then. I had long been feeling that it was my duty to pray *with* her, as well as for her; but I knew my prayer would have to be brief—that she must not be distressed or frightened. The opportunity was before me. I knelt down by the bedside, just as we two had done every day of our lives for years past, and prayed, as nearly as I can remember, as follows:

"O Lord, have mercy on thy children in this their great trial. We are weak and helpless, but thou art mighty. Have mercy on the dear wife, and give her the sleep she needs so much, if it be consistent with thy holy will. Amen."

I then got up, pulled a chair toward her bedside, took her hand in mine while I placed my other hand across her bewildered brow, praying mentally with every breath I drew that God would answer our prayer. There was no mistake about it. She was becoming more quiet. The labored breathing, the nervous, fidgety unrest, were quieting down. In fifteen minutes she was asleep.

"Oh God be praised!" was my mental prayer, while I scarcely dared breathe. Her sleep was somewhat troubled; but it lasted perhaps a quarter of an hour, and she awoke much relieved. I remained by her side, and she slept a little again. The doctor thought the chloral would perhaps now help her to get rest. It did so, and the crisis was past. In the morning the fever had abated perceptibly. No more chills of any account followed, and she commenced to recover. Some of you may ask why I had not knelt by her side and prayed as I did, before. My reply is, that it was somewhat a question as to whether such a course of proceeding would

have been wise or not. She was already nervously unstrung. In her usual health the thought of dangerous sickness, or even death, would not have disturbed her at all; but at this time any little thing, even the flowers, for instance, was in danger of tipping the delicately poised balance in the wrong direction. When in her distress she *appealed* to me, then was my opportunity. All of the doctor's remedies produced exactly the effect he said they would. He told us there would be a crisis, and almost named the day when it would probably come. After the fever left, the pleurisy set in again with a cough that was somewhat alarming. By careful nursing, and the use of recognized remedies, the congestion (if that is the proper name) in that one lung was arrested, and recovery followed quicker than the doctor or anybody else had anticipated.

"Concluded in our next."



THE ANTI-SALOON CONGRESS AT COLUMBUS, O., ETC.

It seems a little funny that, just as soon as I get into one of our large cities, somehow or other I seem to gravitate straight toward a saloon. Now, you need not laugh, for I am talking in sober earnest. By some fatality I also seem to gravitate toward one of the low-down sort. May be you have heard of *other* people who seem to have the same bent. Again, this thing comes about when I have not the remotest idea of going into any such place at all. Seems to me I am making matters *worse* instead of better, so I think I will tell my simple story.

You see I am one of the executive committee; and when I stepped from the cars out into the streets of the great city it occurred to me, as I was going to meet a good many professional men and great scholars, it was no more than fitting that I should step into the first barber-shop and be slicked up generally. Just as I was about to take my seat in the chair, however, I very innocently asked the barber to direct me to the wash-room. There, I have forgotten something.

I did not first go into the barber-shop after all. My first stop was at the Board of Trade rooms where they were registering the names of temperance people. There were a dozen clerks, men and women, just making their pens fly; and when a spruce young chap asked me what church I belonged to I said, "Why, when I am at home I go to the Congregational; but when I am away I seem to belong to the nearest church at hand."

This seemed to be a sort of innovation on the rush of business, for the whole crowd began to laugh, and finally the clerk spoke out:

"Why, this is A. I. Root himself, just as sure as you live."

Then a nice young lady pinned a beautiful silk badge on my coat. I soon forgot all about the badge, however, and now let us go back to the barber-shop.

In answer to my request, the barber looked at his partner, and smiled. I do not know but there was a bit of a wink along with the smile.

"My dear sir, in order to get at the wash-room near by, you will have to go through the saloon."

Now, I did not feel sure just then that he was

talking about a saloon where they sold drinks; besides it was almost time for committee meeting, and I was in a hurry; and, besides all this, why should I be bashful about going into saloons when the straight path of business seemed to lead right through them? I concluded that, if saloon-keepers could stand it, I could, and so I rushed ahead. The obliging barber was going to send a boy along, but I told him I could find the place, without a boy, and then he and his partner smiled again. I went down some steps into a dark place, pushed one or more curtains out of the way, and heard the clinking of glasses and the usual low-lived talk. Time was precious, however; and as I did not see any thing that looked like a wash-room I boldly walked up to the bar and asked to be directed. I noticed a considerable falling-back as I came up. The bartender's face colored up; but when I propounded my innocent question he seemed to draw a long breath of relief, and very courteously directed me. After I came back to the barber-shop I noticed their smiles and exchange of glances again; and then for the first time it occurred to me that there, right on my coat, was that white silken badge, and on it were printed the words:

ANTI-SALOON²
CONGRESS
1896.

Now, you will hardly believe it when I assure you that, in my absent-mindedness, it had never occurred to me it was that badge which had attracted so much attention in the barber-shop and in the saloon until that moment. My first impulse was to think that I had perhaps been unwise to wear that badge all over town as I had been doing. Then I concluded that the badge was nothing to be ashamed of any way, and I finally decided to keep it on, and I rather rejoiced in the privilege of wearing such colors, even if I did innocently push them into a saloon through the back door—a saloon, in fact, where screens were up in front, and little curtained corners and dark places in such plenty that one could hardly be expected to get through without a guide. While cutting my hair something was said about my badge; and the boss of the shop said something as follows:

"Mr. Root, the man who stands behind you cutting your hair is the one who pushed through the law that compels every barber-shop in Columbus to stop work on Sunday, and to remember the sabbath to keep it holy."

When he finished he said if I should be in Columbus over Sunday now or at any other time, it would afford him great pleasure to have me attend their church, and be introduced to their minister. Then he stepped to a drawer, and from a heap of little circulars he handed me one containing the following:

TALKS TO BREADWINNERS.

WHO ARE BREADWINNERS?

All who, by honest toil, are earning their bread are breadwinners.

If you have no Church Home we want you at the
Second
Presbyterian Church.

- Sunday Services.
- 10.30 A. M. and 7.00 P. M.
- Sunday-School 9.15 A. M.
- Y. P. S. C. E. 6.15 P. M.
- Prayer Meeting Wednesday Evening at 7.00 o'clock.

Note.—23,000 people in Columbus don't go to church.
COME.

Permit me to say here before going into details, that the Anti-saloon Congress in January,

1896, was the most enthusiastic meeting I ever attended, and never before was it my privilege to see so many great orators assembled at once on any platform. In our next issue I propose to tell you something of their work, especially since an Anti-saloon League was formed in Washington, D. C., on the 17th of last December. The Ohio plan was adopted; and the war-cry that "the saloon must go," will now soon be heard in every State of the Union. As the movement now no longer belongs especially to the State of Ohio, I shall feel free to give it a little more space in our journal than I have heretofore.

The speaker for the first evening was to be Frances E. Clark, editor-in-chief of the *Golden Rule*, and on that first evening I begged our State Superintendent, Howard H. Russell, to give me a brief note of introduction to Mr. Clark. Do you know why I begged for ten or fifteen minutes of his time, dear reader? You can perhaps guess why, when I tell you that the *Golden Rule* has been prominent among religious papers, not only in advertising Electropoise, but it has given it one of the strongest editorial notices ever given by any paper. I have again and again remonstrated with the manager of the advertising department, but in vain.

Francis E. Clark is a much younger-looking man than I supposed. Perhaps the words "Father Endeavor" have given the impression that he is older. And, by the way, he is one of the most gentlemanly and accomplished men it has ever been my fortune to meet, even if he did, at least for a time, rather seem to defend Electropoise. He is a very careful man in his talk—much more careful than A. I. Root. I told him how it pained me to see a paper that had become such an exponent of good morals to our children giving place to such a fraud as the Electropoise, even in its advertising department. He did not make much reply, however, but courteously allowed me to go on. In attempting to report any part of that ten-minutes' conversation, may God give me grace to mention nothing that might cause even friend Clark to wish I had not given it this publicity. It is a matter of serious import, dear friends, and this thing *should* be made public as fast as we can get at the real truth of the matter. Said I.

"Friend Clark, if a man assured you that he and his family had been greatly benefited by having a horseshoe nailed over his door, what would you think of him?"

"I should think, Mr. Root, that the man was mistaken, or that, if any help had come, it had come through his imagination, and not through any virtue possessed by the horseshoe."

"Good! Now if I can suggest to you some means of proving to your satisfaction that Electropoise is no more a scientific apparatus than the aforesaid horseshoe, my work will be speedily done."

He admitted, of course, that electricity had nothing to do with the curative virtues of the thing. He said the proprietors did not now claim there was any electricity about it.

While this is only partly true, we may let it drop for the present.

Now, look here, doctor; if electricity does not pass along that wire cord, what agency or force does it carry? Heat, light, and electricity are the three imponderable agents. Heat may be carried by a wire sufficiently large, only a few inches. Only electricity travels over any extent of wire or metallic cord. If these people have discovered something else that does carry virtue along a wire, it is a new force or a new agent unknown to science, and would make a

man or company immortal who could show proof of it. No scientific test known to the world can show any force or agency *whatever* brought into play by this senseless apparatus."

"But, Mr. Root, shall we not base our testimony rather on the witnesses—the good honest men and women who have been *cured*? What about these?"

"Just one illustration among the many, friend Clark. Schlatter of Denver—you know of him, of course?"

He nodded.

"Only this week a woman with whom I am well acquainted told me she had visited Schlatter and seen him perform his wonderful cures. She said a woman came there blind. Schlatter touched her with his hand, and she went away rejoicing in her sight. You know, friend Clark, of the great amount of testimony—the *bewildering* testimony—in regard to this man's wonderful healing powers. Now tell me—can you for a moment believe that he has been given miraculous power that he may do these things?"

"No, Mr. Root, I do not believe he has been given miraculous power."

I gathered from his smile that he and I thought alike in regard to this matter. The present age, or the last year or two, have seemed to furnish more cases of wonderful cures along this line than any age before us. Then I urged that, even if the apparatus had done or was doing good, the price was too great. Charging *fifty times* the value of a thing can not be honest business.

"But, Mr. Root, if you go to a doctor you have to pay for things much in this way."

But in this case we have the benefit of his skill, past experience, and intelligence. He tells us *what* to take and what *not* to take."

"But suppose you do not go to a doctor. You go into the drugstore and pay a dollar for a bottle of medicine."

Well, dear friends, I had to give up a little right here. When you go into a drugstore and pay for a bottle of medicine, you do come pretty near—at least a good many times you do—paying fifty times the real value of the thing you buy. Let us be consistent, though, and say *ten times* the real value. A bottle of medicine probably costs the manufacturer 10 cents, and it sells for \$1.00. Of course, the advertising costs a good deal, and the purchaser is expected to pay for said advertising. Friend Clark did not say so, but editors of Christian papers have told me in substance that it is the fashion nowadays to charge a dollar for things that cost only a few cents. Perhaps we should say it is the fashion where we can find ignorant people enough. Now, I protest right here. Farmers, gardeners, and the great mass of people at large, *do not* get any such profit on what they sell. I wonder if these medicine-makers and city people, with their abundance, have any idea that the farmer who sells potatoes at 25 cts., and wheat for 50, gets even four or five times what the thing actually costs them. There is a tremendous wrong right along in this line. I do not believe a man can be a good honest Christian, and be willing to take any such prices from his friends and neighbors.

As I took my leave, friend Clark, in a piece of courteous pleasantries, said I might give Electropoise the credit of having done at least one good thing in his career. It had enabled him to make the acquaintance of A. I. Root, of whom he had often heard; and as we shook hands at parting he expressed a wish to meet me again whenever it might be convenient. Before leaving I said something like this:

"Of course, I have called on you to suggest, and not to *dictate*, in regard to your duty. But I do hope, dear friend, that you will investigate

more fully in regard to this matter, and see if I am not right in thinking there is a very great need that special care be taken that a periodical taking the front rank as a *spiritual teacher* in the best morals of our land, should be careful of even its advertising pages, and more careful still of its editorial utterances in regard to things of this kind." He smilingly promised he would heed my suggestions.



ALFALFA ONCE MORE.

Many are continually asking what alfalfa is like, and others are sending in plants inquiring if this, that, or the other, is alfalfa. Sweet clover has also been confused with it. To tell the truth, the two plants are, in many respects, very much alike. On this account, we have decided to give still another picture of alfalfa. The cut shows a branch of a plant in bloom; also enlarged views of the seed and seed pods. Any one should be able to decide correctly from the branch, flowers, seed-pods, or seed.



ALFALFA-PLANT IN BLOOM; A B, SEED-POD; C, SEED.

This cut, like the ones shown last month, was kindly loaned us by the U. S. Department of Agriculture. We take pleasure in submitting these pictures, because they are so modest and correct, especially when compared with some of the exaggerated pictures in some of our seed catalogs. The small picture given in our last issue was that of an alfalfa-plant six weeks old. The large one represents a plant about three years old. Permit us to say once more that any one who contemplates making any test of alfalfa at all should send for Farm-

er's Bulletin No. 31, Department of Agriculture, Washington, D. C. In the alfalfa bulletin we find nothing in regard to its value as a honey-plant. It seems a little strange that such a complete and exhaustive treatise should omit to mention that the plant produces some of the finest honey in the world, and it has for several years been shipped by the *carload* from regions where alfalfa is largely grown. In talking with the officer in charge of the government bulletins at Atlanta, he said they would have been very glad indeed to incorporate the facts in regard to its value as a honey-plant had somebody furnished them in time.

THE BUSH LIMA BEANS.

The matter may now said to be settled. Just as good lima beans can be grown on bushes as on poles, and therefore there is nothing to hinder growing them by the acre, and at present prices it will pay big and no mistake. They are quoted in most of the seed-catalogs at from \$7 to \$8 a bushel; but if they bring only \$4 or \$5 it will pay better than almost any other crop I know of. And I am reminded of another kink in the business this 14th day of January, 1896. Last fall, before we got through picking and selling them green we had a frost as you know. It killed the bush limas—that is, enough to stop their growing, but it did not hurt the beans inside of the pods. We gathered them all green and ripe, and took pains to get them dried thoroughly, even the green pods—and thrashed out the beans. After being put through the fanning-mill they were sorted over by hand, it being an easy matter to tell the ripe beans from the others. Of course, the beans that were not ripe and dry when the frost came would be fit only to cook; and I was agreeably surprised to find that, when cooked, they are just about as nice as green beans just gathered. We have been told before that lima beans might be gathered green, and then dried, and be very nice for winter; but it was a new idea to me that beans caught by the frost might be utilized in this way. They are ever so much nicer than the hard dry matured bean. I think if dried green beans could be put on the market, after people once get a taste of them they would be an important food product. You see, they can be kept indefinitely; but when you come to cook them they have almost the flavor of new green lima beans.

A NEW BEAN THAT YIELDS BUSHELS FROM ONE SINGLE STALK.

Friend H. J. Rumsey, of Boronia, New South Wales, sends us eight sample beans, with a letter of explanation containing the following:

I have introduced a new bean—the Tongan—which in Sydney and warm climates is about the biggest acquisition of the times. One plant will yield bushels of beans of delicious flavor for several months; and being perennial it will stand and grow bigger year by year until it covers hundreds of square feet. I am sending you a packet for you to send to some of your Florida friends to try. It should flourish there.

Well, well, well! We are ahead of the seed catalogs this time, and no mistake—a single bean-plant yielding bushels of beans, and covering hundreds of square feet! Friend R., it almost makes me feel sorry that I do not live in Florida. But we have a greenhouse right across the way, and two of the beans you sent us will be planted there at once. I will explain to our readers that the bean is a good deal the same shape as our common ones, and about the size of the York State Marrow. But it is jet black excepting there is a sort of ridge or excrescence on the edge, reaching from one end to the middle of one side, and this is snowy white. It looks a little like the snow-white comb on the head of a fowl, providing said fowl were jet

black; or you might say a sort of topknot. Now, there are only eight of these beans in the United States. I will plant two in the greenhouse now, and two later on. Two more we will send to friend Hart, in Florida, and the other two to friend Poppleton, who, as you know, is still further down in the tropics. Is it not a good thing that GLEANINGS goes all over not only Uncle Sam's domain, but pretty much all over the whole wide world?

There is one thing more about this bean; Friend Rumsey says the seeds will come up quicker if soaked in boiling water before planting, and he has made the word "boiling" emphatic. Truly it must be a *tropical* plant. Now you see I shall have a bean story to write up once a month or oftener.

By the way, my Thoroughbred potatoes had a backset when we had that freeze away down below zero. They were not killed, but they still look sick and discouraged from the effects of the blizzard.

SUB-IRRIGATION FOR GRAND RAPIDS LETTUCE.

The following, from our friend Eugene Davis, who gave the world the Grand Rapids lettuce, will probably be read with much interest by all the gardening friends:

Friend Root:—I began to think you were losing interest in greenhouses, growing lettuce, etc.; but when the last number of GLEANINGS arrived I saw you were as enthusiastic as ever in gardening. I have just read Bulletin 61 of the Ohio Experiment Station, and I agree with you that it is the best thing on lettuce-growing I have ever read. The directions are so plain that any beginner can easily follow them.

I tried sub-irrigation on part of a bench last winter, but it did not prove very successful, owing to the benches being old, and the cross-pieces were too far apart, causing the boards to sag, and cracking the cement. I am trying it again this winter in a small way, wishing to give the method a fair test before trying it on a large scale. I have raised and sold one crop, and it is a week or ten days earlier than the surface-watered. As to the weight I can not say, not having cut the rest of the bench.

I made the bench water-tight by using two rolls of water-proof rubberoid roofing,* which will cover a space 10x20 feet. There are nails and paint for painting the seams. I use 2-inch tile, 2 feet apart crosswise of bench. The cost of the tile and paper was \$5.00. I can't say how long it will last, but it is all right for this season.

EUGENE DAVIS.

Grand Rapids, Mich., Jan. 18.

GETTING A POOR FARM INTO GOOD CONDITION.

Friend Root:—I am about to take hold of a farm which has been abandoned for some years except as a pasture. It is poor and worn out, with little or no grass, and is nearly all in daisy. The soil is 6 or 8 inches deep, and a light sandy loam, with some loose rock. I want to get it into clover; but it is too poor to get a good catch, and I intend to plow and give it a heavy coat of lime, which will put it in better condition to take the clover and oats.

Now, I want to get some paying crop on part of the land (10 acres), such as potatoes; and lime is bad for them. Do you think I can safely plant them, using 1500 lbs. of No. 1 chemical fertilizers per acre, and giving them good culture, such as recommended by Mr. Terry and others? Mr. Terry, I know, does not think much of chemicals on *his* land. What do you know of its uses by others in bringing up poor lands in the way I propose, with potatoes?

The subsoil of the land is a tolerably heavy clay; and what grass is on the land is principally wire grass and redtop, with a little wild grass mixed through it; but very little grass of any kind, and nearly all in a thick stand of daisy. The land lies facing the east, with a nice slope, enough not to need ditching.

H. Z. SHRIVER.

Terra Alta, W. Va., Jan. 15.

Perhaps the above letter is a little out of place under the head of high-pressure garden-

* This material seems as if it must answer a good purpose for lettuce-beds. It costs \$2.25 for 100 square feet.—A. I. R.

ing; but my advice may, perhaps, be worth something nevertheless.

In the first place, I don't believe any paying crop can be secured the first year from such a farm—that is, any crop that will pay for the fertilizers the first year; and my experience agrees exactly with that of Mr. Terry and our Ohio Experiment Station. At the present price of average farm crops, and the present price of fertilizers, it does not seem to me that a farmer can afford to buy chemical fertilizers—at least that is my experience. Nevertheless, I would go to work and make that land good if it were mine. Save every bit of manure, according to Terry's teachings in the potato book, and Winter Care of Horses and Cattle. Buy stable manure if you can get it near by cheap in your neighborhood. After having done this, or if you can not do any thing better, raise crops to plow under just as fast as possible. In our locality we would turn under rye, then buckwheat, and finally clover, one crop after another, as many as possible in a season. In the fall you can doubtless work in crimson clover to advantage in your locality. If you are far enough south for cow-peas, get in a rotation of them. After you get a good crop of clover turned under you are all right for paying crops. Your coat of lime to commence with is probably all right. You might try some potatoes on some of your best land; but I don't think they would pay cost unless prices are away up above what they are at the present writing.

You say the land has slope enough so as not to need ditching. I should not agree with you here unless there is a gravelly subsoil that lets the water off quickly. I would commence tiling it right off this very month according to the directions in Chamberlain's book on underdraining. As you describe the land, I should think laying tiles was the very best thing to do, if you want to get your ten acres into shape so it will bring paying crops as speedily as possible. Our ground upon the hill by the windmill has given some of the very best crops I ever raised; but it is a heavy hard clay away down, and it slopes to the east so much that we do not dare have the furrows run up and down hill, on account of wash. After we got it underdrained (tiles laid 30 inches deep and 30 feet apart), we turned under a poor stand of clover, and got a good paying crop of potatoes the very first time.

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